DOCUMENT RESUME

ED 428 535 EF 005 574

TITLE	Schools of Interest 8.
INSTITUTION	North Carolina State Dept. of Public Instruction, Raleigh. Div. of School Planning.
PUB DATE	1993-04-00
NOTE	173p.; For other reports in this series, see EF 005 570-573, ED 095 661-662, and ED 159 782.
PUB TYPE	Guides - Non-Classroom (055) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Construction Costs; *Educational Facilities Design; *Educational Facilities Improvement; Educational Facilities Planning; Elementary Secondary Education; *Public Schools; *School Construction
IDENTIFIERS	North Carolina

ABSTRACT

North Carolina local public school boards have the statutory responsibility for operating public schools and for entering into contracts for design and construction of their schools. This document presents examples of plans for school buildings planned or constructed during the last few years , as of 1993, representing a wide range of educational philosophies and design solutions. Elementary, Middle, and High School buildings are included. Each offering provides the floor plan, photographs or line drawings of the school, and costs and contractor information. (GR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 428 535

EF 005 574

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

E. Brumback

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Schools of Interest

Eighth Edition

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

SCHOOL PLANNING, DIVISION OF SCHOOL FACILITY SERVICES, AUXILIARY SERVICES
NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION, BOB ETHERIDGE - STATE SUPERINTENDENT

Bob Etheridge
State Superintendent
North Carolina Department of Public Instruction

Dr. Charles H. Weaver
Assistant State Superintendent
Auxiliary Services

Tom O'Kelley
Director
Division of School Facility Services

Dr. Karen S. Gulledge
Chief Consultant
School Planning

Front Cover Credit:
Broughton High School (1929)
Wake County
Designed by William Henley Deitrick, FAIA

Back Cover Credit:
Broughton High School, Addition (1992)
Wake County
Designed by Small Kane Architects, P.A.
Photograph by: Jerry Blow Photographer

April, 1993

Received
MAR 16 1999
NCEF

Schools of Interest

Eighth Edition

Foreword

In North Carolina, the statutory responsibility for operating public schools is assigned to local boards of education. A board of education also has the legal responsibility and authority for entering into contracts for the design and construction of public school buildings within its jurisdiction.

Charged with these responsibilities, conscientious school boards and superintendents keep abreast of recent developments and trends in public education, utilize extensive professional resources and plan continuously for the improvement of educational programs and facilities.

We commend this eighth edition of *Schools of Interest* to you. Since the first edition in 1971, these publications have served to stimulate effective and imaginative school planning and to strengthen and improve building programs. The staff of the Department of Public Instruction is available for consultation and assistance in all aspects of the planning process.

Bob Etheridge
State Superintendent

Charles H. Weaver
Assistant State Superintendent
Auxiliary Services

Morrisville Elementary School
photograph by: Doggett Architects

We are pleased to present examples of plans for buildings planned or constructed during the last few years. Selecting just a few schools for this publication from among the many notable designs constructed in North Carolina is difficult. There are many others which are worthy of presentation each time we prepare an issue of *Schools of Interest*. Almost all administrative districts have a new school or an addition to an older school which is of particular educational or architectural interest.

The schools presented here represent a wide range of educational philosophies and design solutions. These preferences and objectives blend with the capabilities of local design services and educational objectives to produce more variety than is ordinarily believed to be the case. Each community can express its own educational preferences. The public school planning process is remarkably responsive in this respect.

Building plan relationships are a matter of choice as well as tradition. Special program facilities are included or anticipated wherever local educational preferences dictate. Room sizes, arrangements and relationships can and do vary as much as the perceptions of educators, architects and local school boards. The latest educational or architectural trends are frequently reflected in new school buildings. This variety of building design solutions is illustrative of the democratic complexity and responsiveness of public education.

The objective of this publication is to stimulate good planning. Staff members of School Planning are available to work with local superintendents and their boards of education toward this objective.

Karen S. Gulledge

Karen S. Gulledge
Chief Consultant
School Planning

Location of Schools of Interest

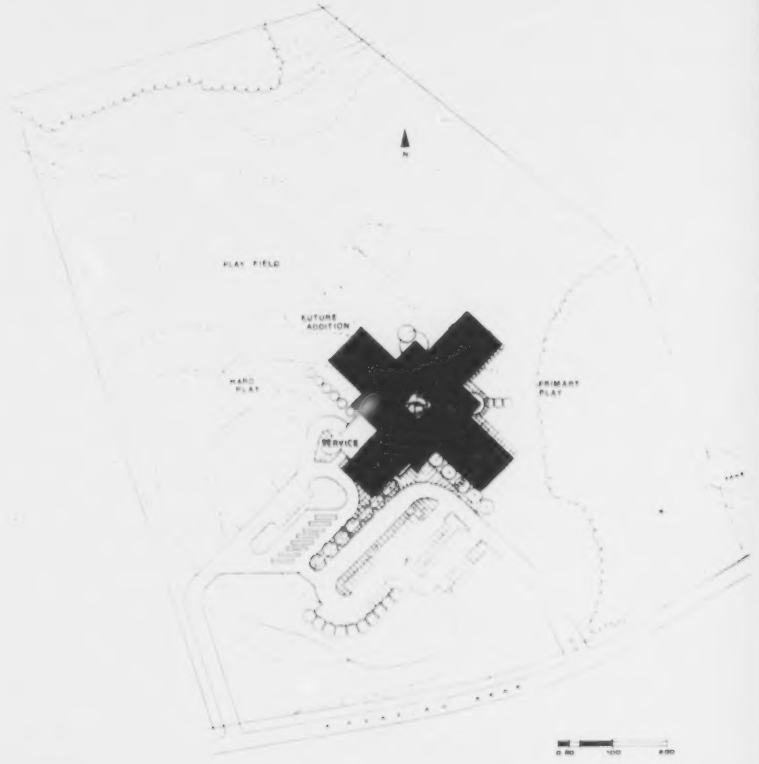
Contents

Project	page no.
Elementary Schools	
Eastern Elementary	1
J. J. Jones Elementary	2
Morrisville Elementary	3
Mountain View Elementary	4
Seventy-First Area Elementary No. 2	5
Supply Elementary	6
Swain County Elementary	7
Thomasville Primary	8
University Meadows Elementary	9
Viewmont Elementary	10
Zeb Vance Elementary	11
Middle Schools	
J. N. Fries Middle	12
Madison Middle	13
West Hoke Middle	14
High Schools	
Leesville Road High	15
Mount Pleasant High	16
Northampton County High - West	17
Apple Valley Middle & North Henderson High	18

Project	page no.
Renovations and Additions	
Frank Porter Graham Elementary	19
Topsail Elementary	20
Conway Middle	21
Goldsboro Middle	22
Hanes/Lowrance Middle	23
Chase High	24
East Henderson High	25
Junius H. Rose High	26
Needham Broughton High	27
Richard J. Reynolds High	28
Feature Schools	
Chatham Central High - Fieldhouse	29
Chapel Hill High - Guidance Office	30
Isabelle Wolfe Development Center	31
Lexington City Schools - Developmental Center	32
Mecklenburg County - Maintenance Center	33
Gaston County - Transportation Facility	34
Polk County High - Bids	35
Sun Valley Middle - Mechanical System	36

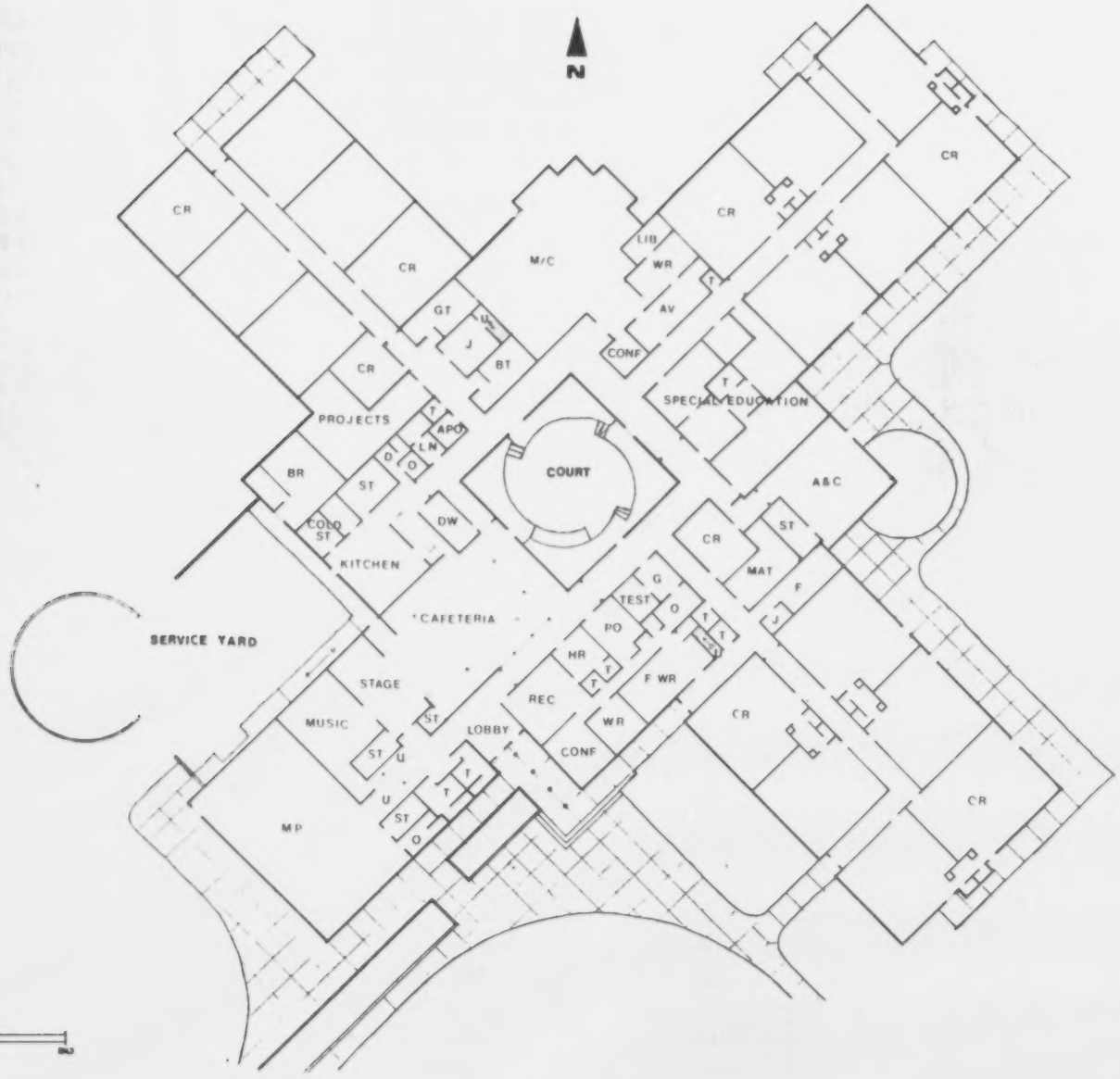
rendering by: Jim Willis

Eastern Elementary is well placed on the site using an existing wooded area as a buffer for the primary playground and leaving plenty of open play area for older grades and future classroom expansion. Parents and buses unload children along a common drop-off zone accessed from separate entrance drives. The building is divided into four main wings centered around an interior landscaped courtyard. Three wings are for classrooms and one wing is for core facilities and after hours community use. The media center is located close to each classroom wing with one main entry for students and better librarian control. This plan is very compact.



Administrative Unit	Hoke County
Grade Organization	K-5
Approximate Capacity	400
Opening Date	January 1993
Architect	Owen Smith and Willis Architects
Landscape Architect	Sears Design Group
Structural Engineer	Lasater-Hopkins
Mechanical/Electrical Engineer	Adcock Engineering
Acreage of Site	30 Acres
Building Square Footage	52,814 SF
Land Cost	25 acres donated, 5 acres bought for $22,500
Building Cost	$2,670,162
Equipment and Furnishings Cost	$117,562

Eastern Elementary

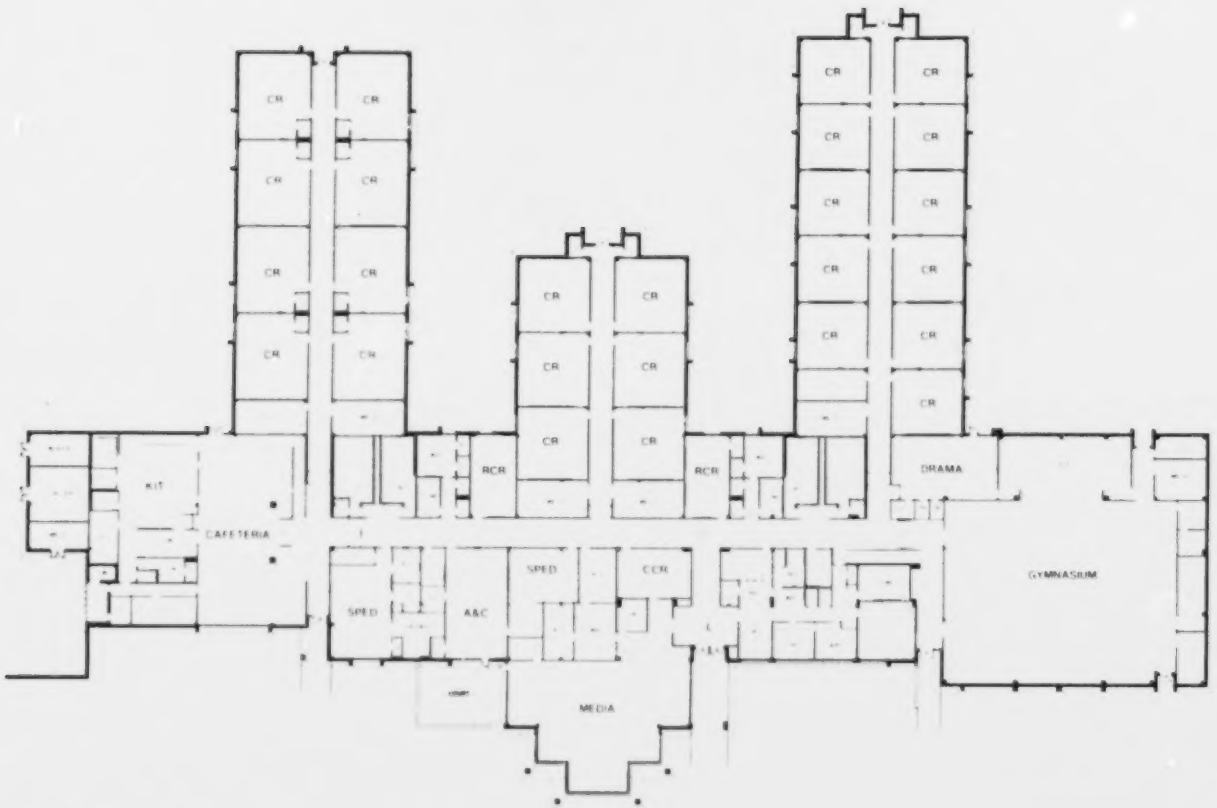


rendering by: Richard Smith and Cindy Kendziora

J.J. Jones Elementary is centrally located on the site with parking in front and playgrounds behind the school. There are separate bus and car drop-offs with a common covered walkway. All interior spaces are handicap accessible and group toilet facilities are located near the intersection of classroom wings and core facilities. Each classroom has been designed with an underfloor cabling system to allow individual classrooms to engage in present and future technology for instruction. Mechanical equipment is serviced and building/kitchen supplies are delivered in one location, well screened from the public and children. This school can expand easily in the future.

Administrative Unit	Mount Airy City
Grade Organization	K-5
Approximate Capacity	608
Opening Date	November 1993
Architect	Doggett Architects, Inc.
Landscape Architect	McNeely Associates
Structural Engineer	GKC Associates
Mechanical/Electrical Engineer	Progressive Design Collaborative
Acreage of Site	17 Acres
Building Square Footage	85,097 SF
Land Cost	$300,000
Building Cost	$5,422,681
Equipment and Furnishings Cost	$300,000

J. J. Jones Elementary

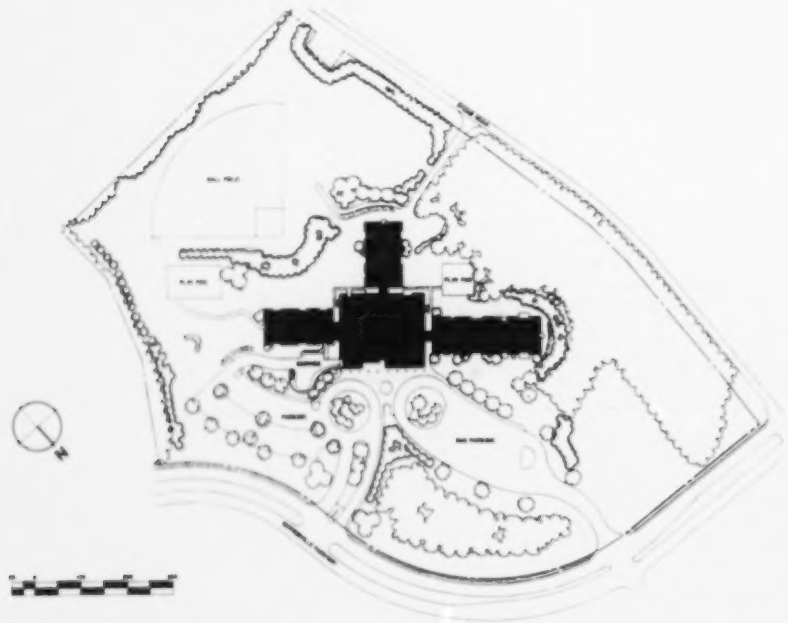


FLOOR PLAN

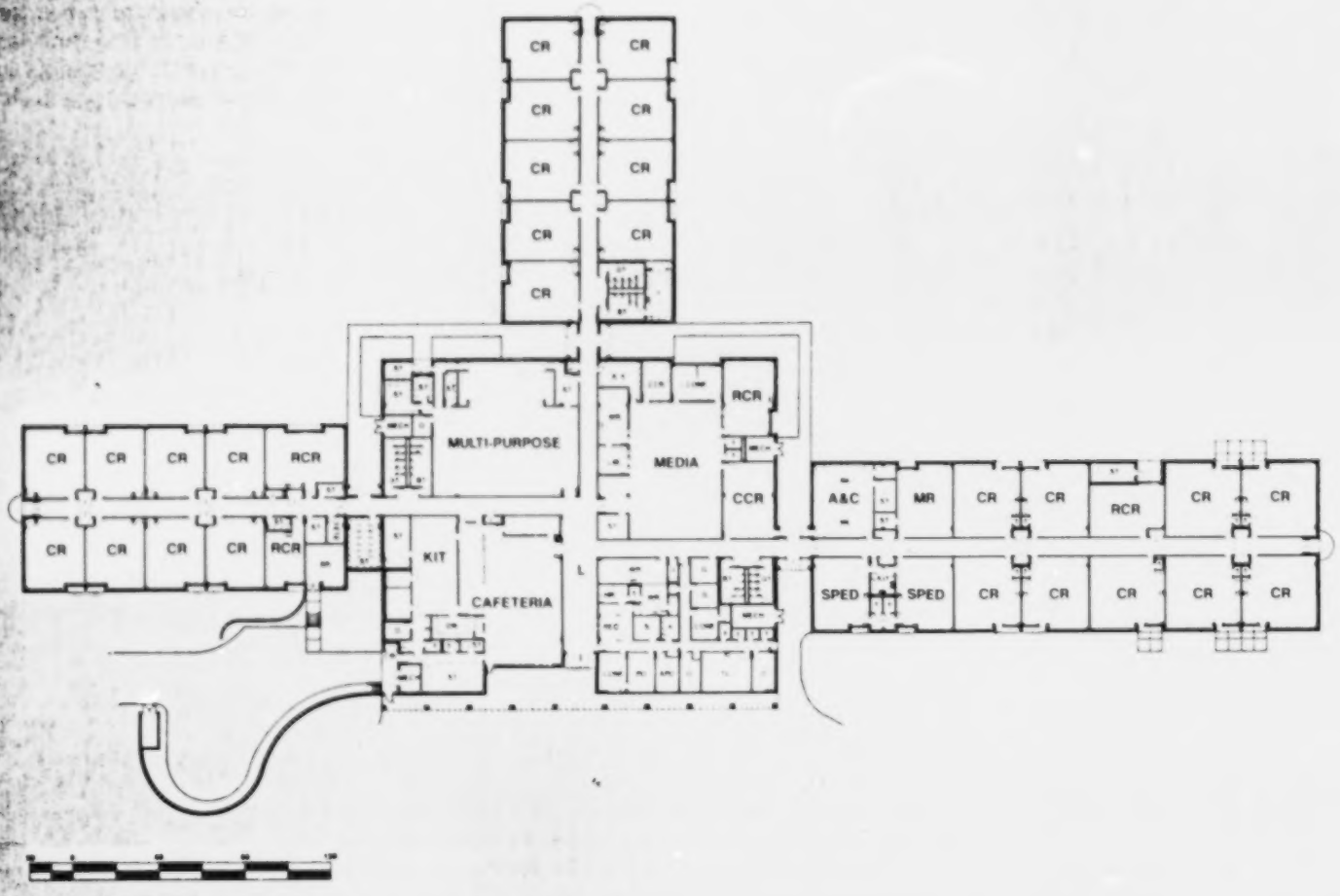
Morrisville Elementary

photograph by: Doggett Architects

Morrisville K-5 Elementary is Wake County's first year-round four track Elementary School. The student capacity is 622 students on a traditional calendar and 827 students on a year-round calendar. The site provides separate bus and car areas, with drop-offs at a common covered walkway. The building core contains functions that can be opened after school hours while retaining use of toilets and fire exits, while the classroom wings can be locked. Group toilets are located at the intersection of each classroom wing to the core facilities. The service court is located on the front of the building and well-disguised from the public by a curved screen wall.



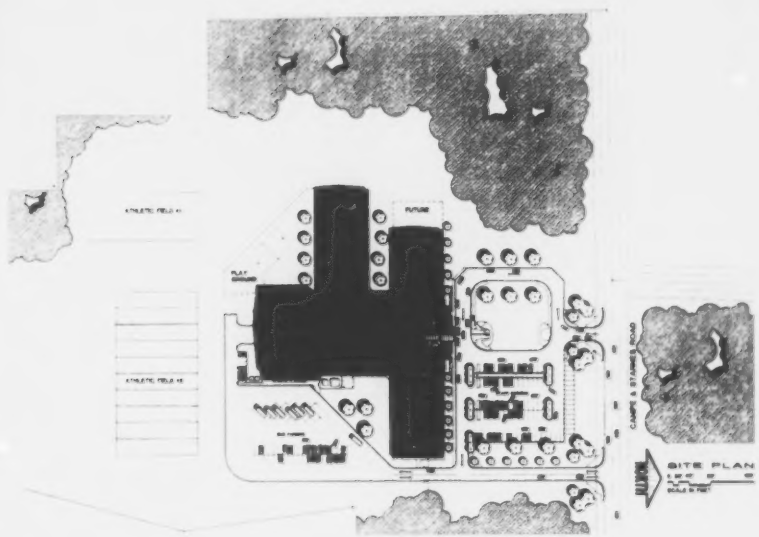
Administrative Unit	Wake County
Grade Organization	K-5
Approximate Capacity	650
Opening Date	July 1991
Architect	Doggett Architects, Inc.
Landscape Architect	McNeely Associates
Structural Engineer	GKC Associates
Mechanical/Electrical Engineer	Douglas Y. Perry Associates
Acreage of Site	25.123 Acres
Building Square Footage	70,640 SF
Land Cost	$614,450
Building Cost	$4,487,897
Equipment and Furnishings Cost	$350,365


CR
CR
CR
CR
CR
CR
CR
CR
CR
CR
CR
CR
CR
CR
CR
CR
RCR
MULTI-PURPOSE
MEDIA
RCR
CCR
A&C
MR
CR
CR
RCR
CR
CR
CR
CR
CR
CR
CR
CR
RCR
KIT
CAFETERIA
SPED
SPED
CR
CR
CR
CR
CR

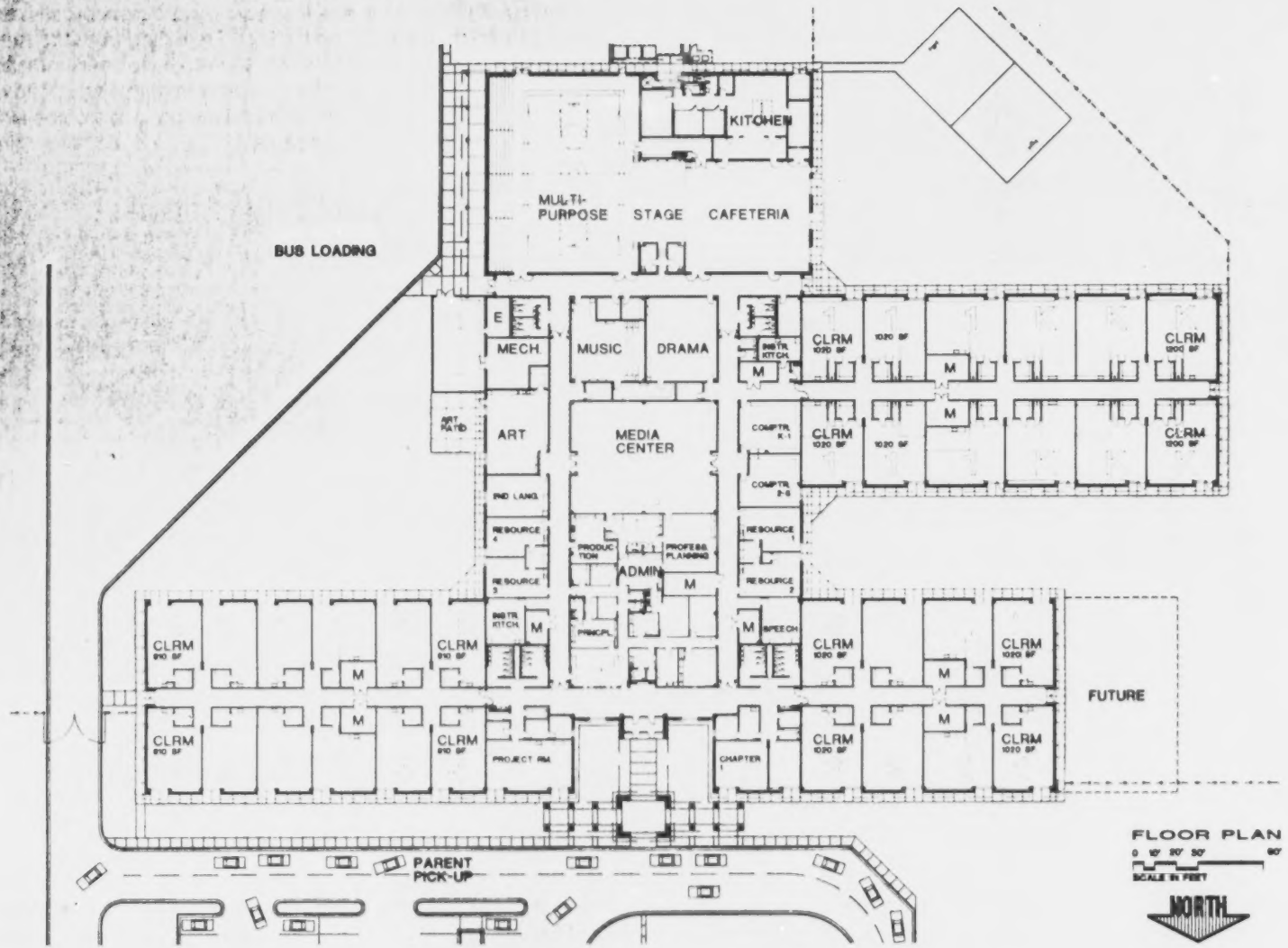
Mountain View Elementary

photograph by: Steven Taynton, School Planning

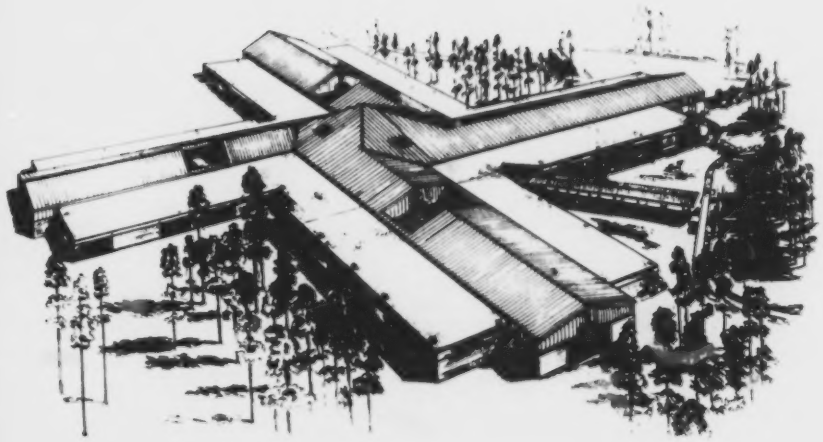
Mountain View Elementary has a large loop entrance drive for parent/student drop-off and a separate bus parking area in the back of the school. The K-1 classrooms are located closest to the main core facilities and furthest from the main entry. This location permits a fenced play area which projects off the classroom wing for maximum safety of the K-1 children. The media center is designed as the heart of the school and is equipped with a data center to serve 12 computers in each classroom. This allows for future flexibility in technology and changing needs of the school.



Administrative Unit	Catawba County
Grade Organization	K-6
Approximate Capacity	850
Opening Date	August 1992
Architect	Orkan Architecture, P.A.
Landscape Architect	Jordan Design Collaborative, P.A.
Structural Engineer	Browning-Smith Associates, P.A.
Mechanical Engineer	McKnight-Smith Engineers, Inc.
Electrical Engineer	Bullard Associates, Engineers
Acreage of Site	30 Acres
Building Square Footage	90,000 SF
Land Cost	N/A
Building Cost	$4,541,400
Equipment and Furnishings Cost	$200,000

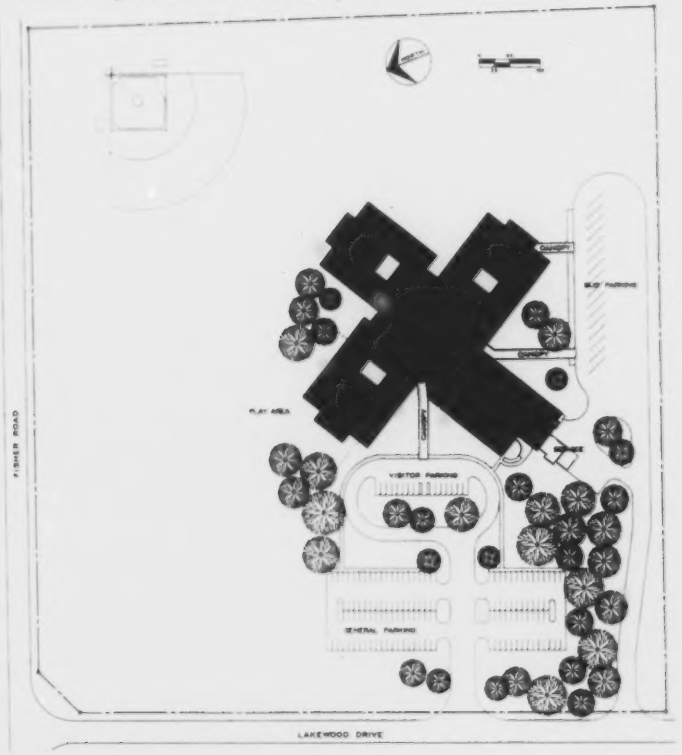

KITCHEN
MULTI-PURPOSE
STAGE
CAFETERIA
BUS LOADING
MECH.
MUSIC
DRAMA
ART
MEDIA CENTER
ADMIN
PRINCIPAL
PROJECT RM.
CHAPTER
SPEECH
FUTURE
PARENT PICK-UP
FLOOR PLAN
SCALE IN FEET
NORTH

Seventy-First Area Elementary No. 2



rendering by: Ray Bronski

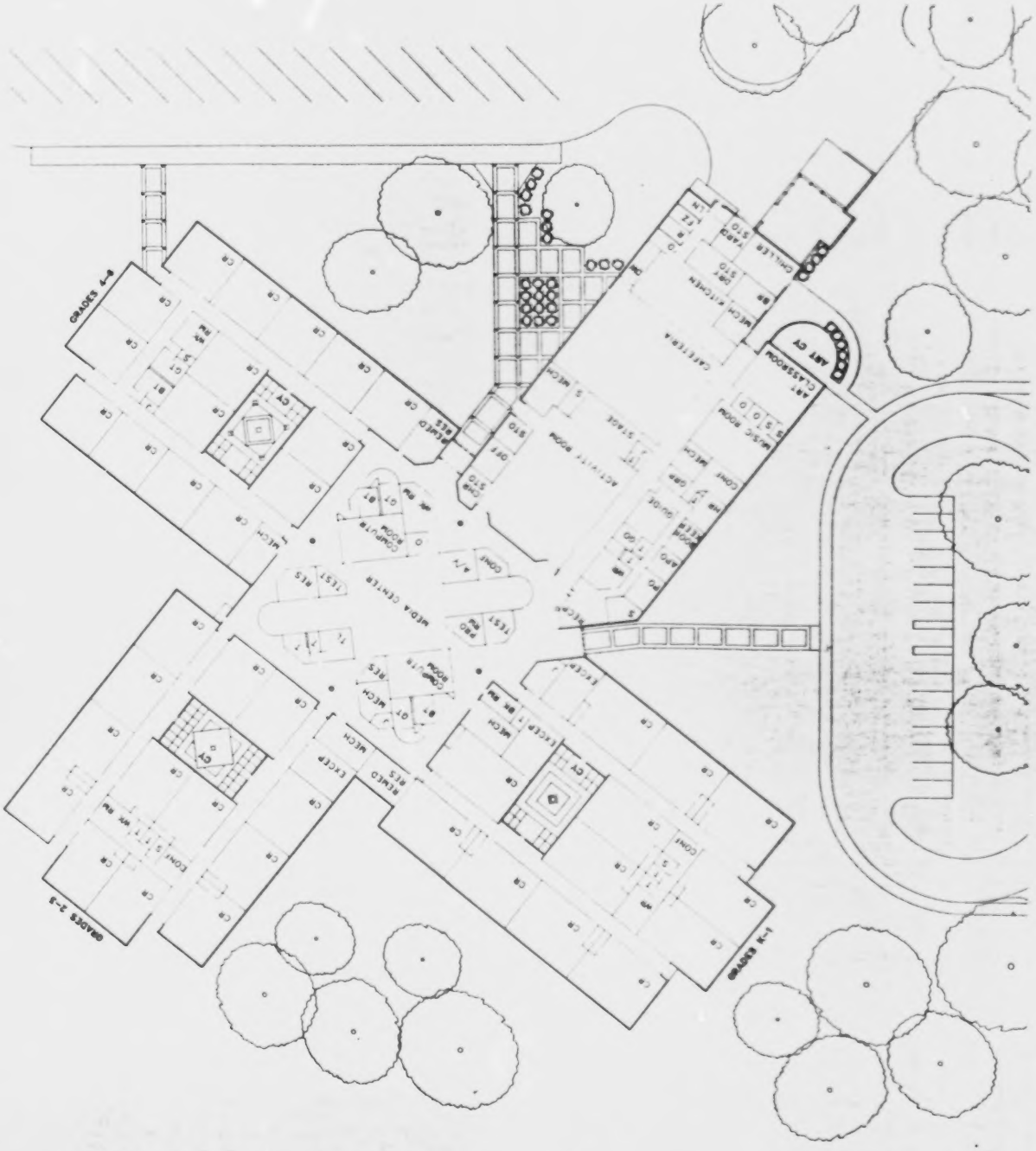
Seventy-First Area Elementary has two separate entrance drives for buses and cars. Covered walkways are provided at all main entry doors and a fenced play area is provided for the K-1 classroom wing. The main design concept of this building was to physically and symbolically make the media center the focus of the facility. Projecting from the media center are three radiating classroom wings which have been compactly designed for specific age groups. Each classroom wing is equipped with a teachers' workroom/conference area and interior classrooms which gain natural light from interior courtyards.



Administrative Unit	Cumberland County
Grade Organization	K-6
Approximate Capacity	940
Opening Date	August 1994
Architect	Schuller and Associates
Civil Engineer	Moorman, Kizer and Rietzel, Inc.
Structural Engineer	Fleming and Associates
Mechanical/Electrical Engineer	Progressive Design Collaborative
Acreage of Site	28 Acres
Building Square Footage	96,845 SF
Land Cost	$320,000
Building Cost	$4,842,914
Equipment and Furnishings Cost	$529,000

Seventy-First Area Elementary No. 2

33

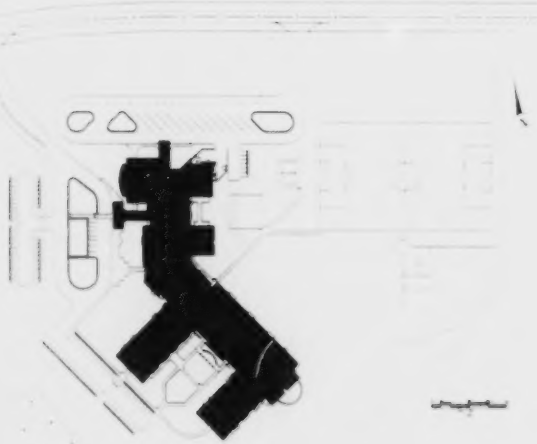


32

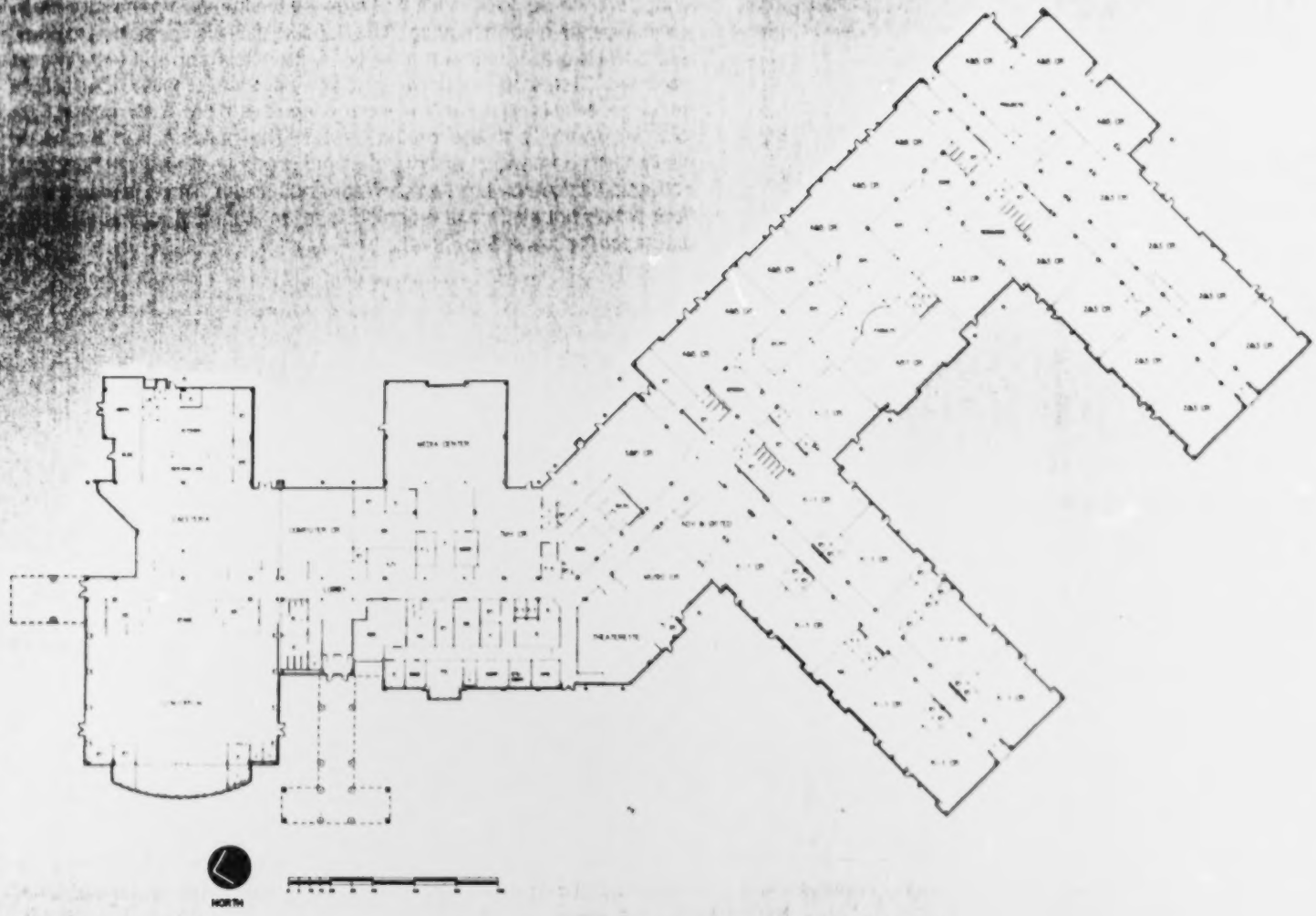
Supply Elementary

photograph by: Boney Architects

Supply Elementary is located on a large rural site with separate entrance drives for buses and cars. The building is linear in form with the classroom wings surrounding an exterior playground and art court. Small group project rooms open directly into the corridor beside the classrooms for Grades 4 & 5. A suite of classrooms was designed for special education students and located between the core facilities and the regular classrooms. The gymtorium is sized to seat the entire student body for special presentations on stage. The theaterette has built-in risers for small group informal presentations and a folding partition that opens into the music room for larger presentations.

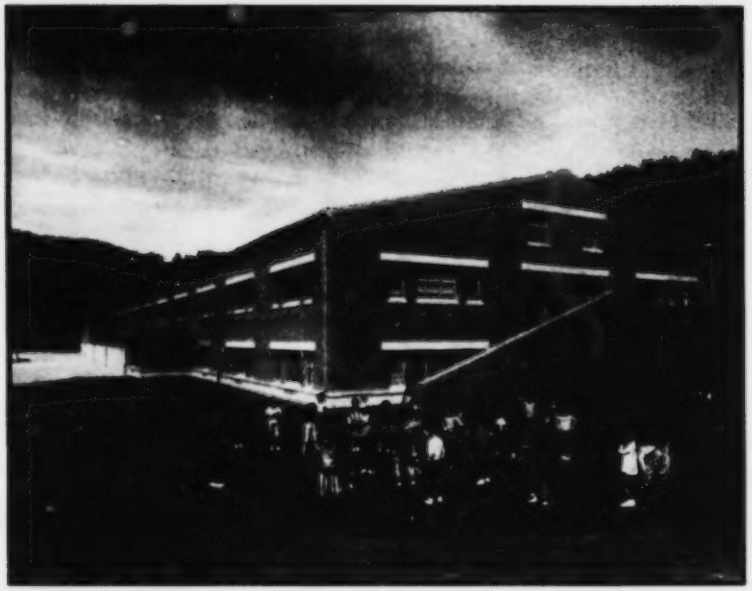


Administrative Unit	Brunswick County
Grade Organization	K-5
Approximate Capacity	750
Opening Date	August 1992
Architect	Boney Architects, Inc.
Landscape Architect	Howard T. Capps & Associates
Civil Engineer	Talbert, Bright & Associates
Structural Engineer	Morrison & Sullivan Engineers
Mechanical Engineer	Cheatham & Associates
Electrical Engineer	Henry Von Oesen & Associates
Acreage of Site	40 Acres
Building Square Footage	91,450 SF
Land Cost	$75,000
Building Cost	$5,232,115
Equipment and Furnishings Cost	$300,000



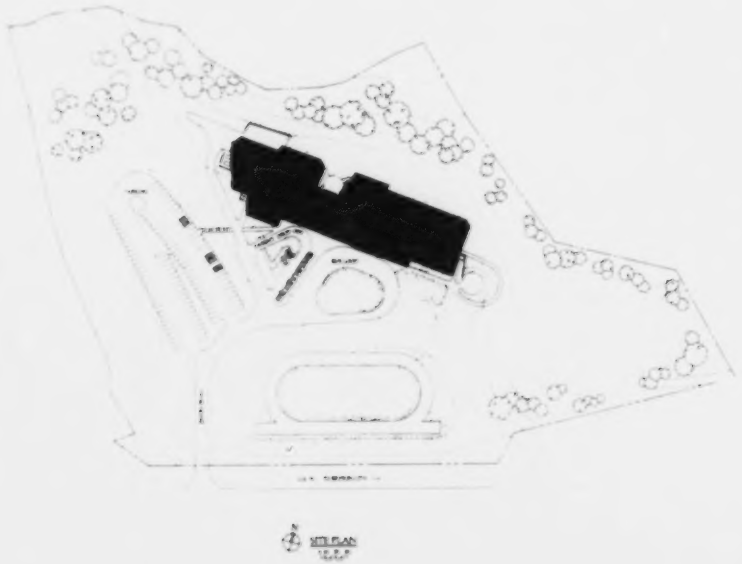
BEST COPY AVAILABLE

Swain County Elementary

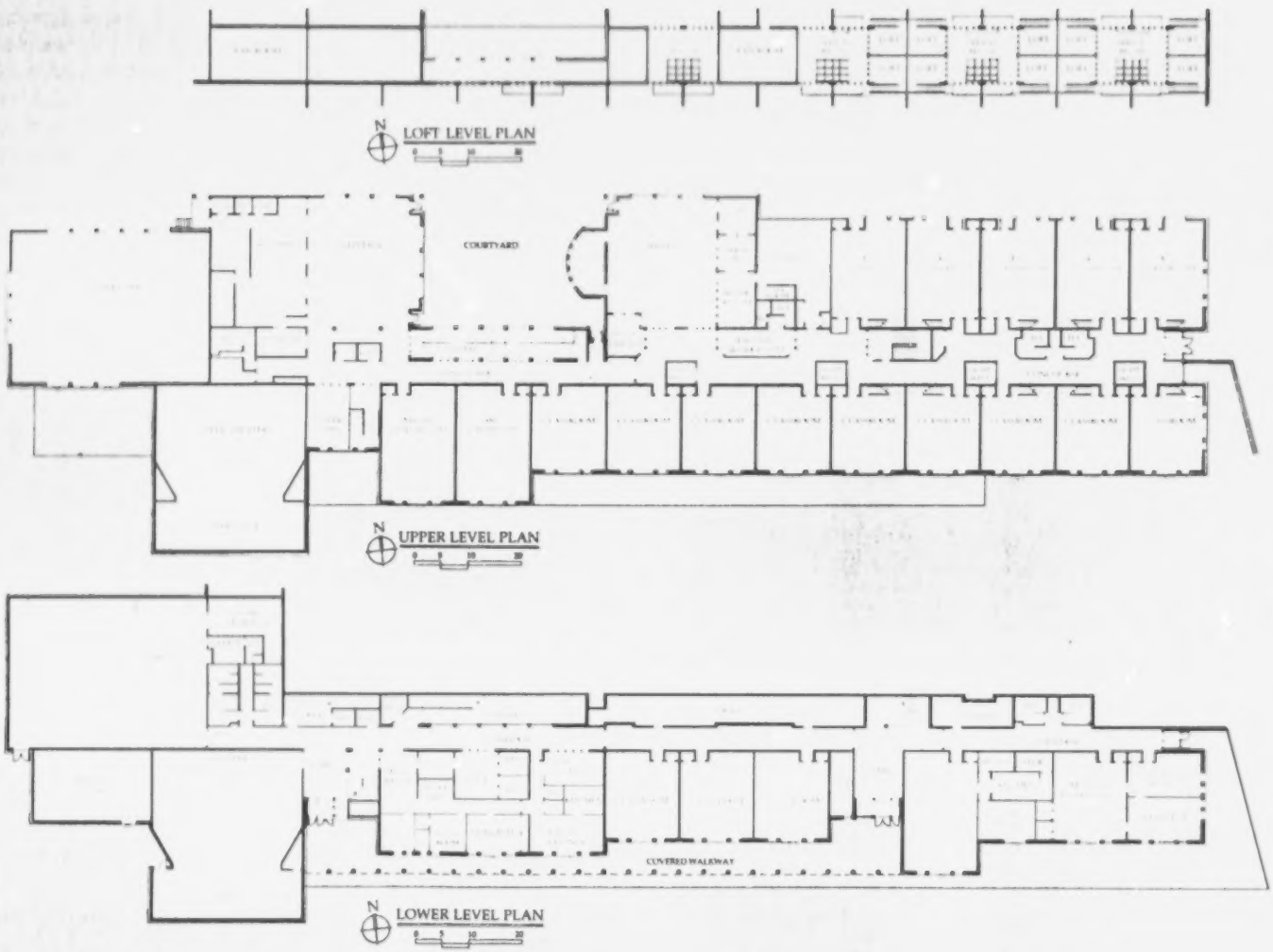


photograph by: J. Weiland Fine Photography

Swain County Elementary is located on a mountainous site and designed with three floor levels that step-up the steep terrain naturally to avoid excessive earth moving. The building was also designed to allow as much natural light into the facility as possible and still remain cost effective. Clerestory windows and large skylights provide natural light throughout the building and an exterior courtyard provides natural light to the cafeteria and the media center. The building has two main classroom floors which exit directly onto grade level and are handicap accessible inside by both an elevator and a ramp. There is also a third floor which houses small teaching lofts, mechanical rooms and light courts for the lower floor levels.



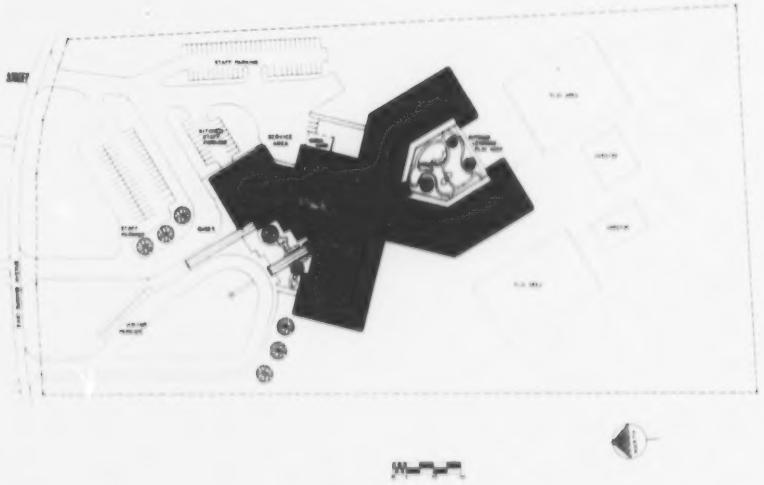
Administrative Unit	Swain County
Grade Organization	K-5
Approximate Capacity	450
Opening Date	August 1991
Architect	Padgett & Freeman Architects, P.A.
Interiors	Padgett & Freeman Interiors
Structural Engineer	Sutton-Kennerly & Associates
Mechanical Engineer	Kelso-Regen Associates
Electrical Engineer	Vreeland Associates
Acreage of Site	14 Acres
Building Square Footage	65,000 SF
Land Cost	$250,000
Building Cost	$4,500,000
Equipment and Furnishings Cost	$200,000



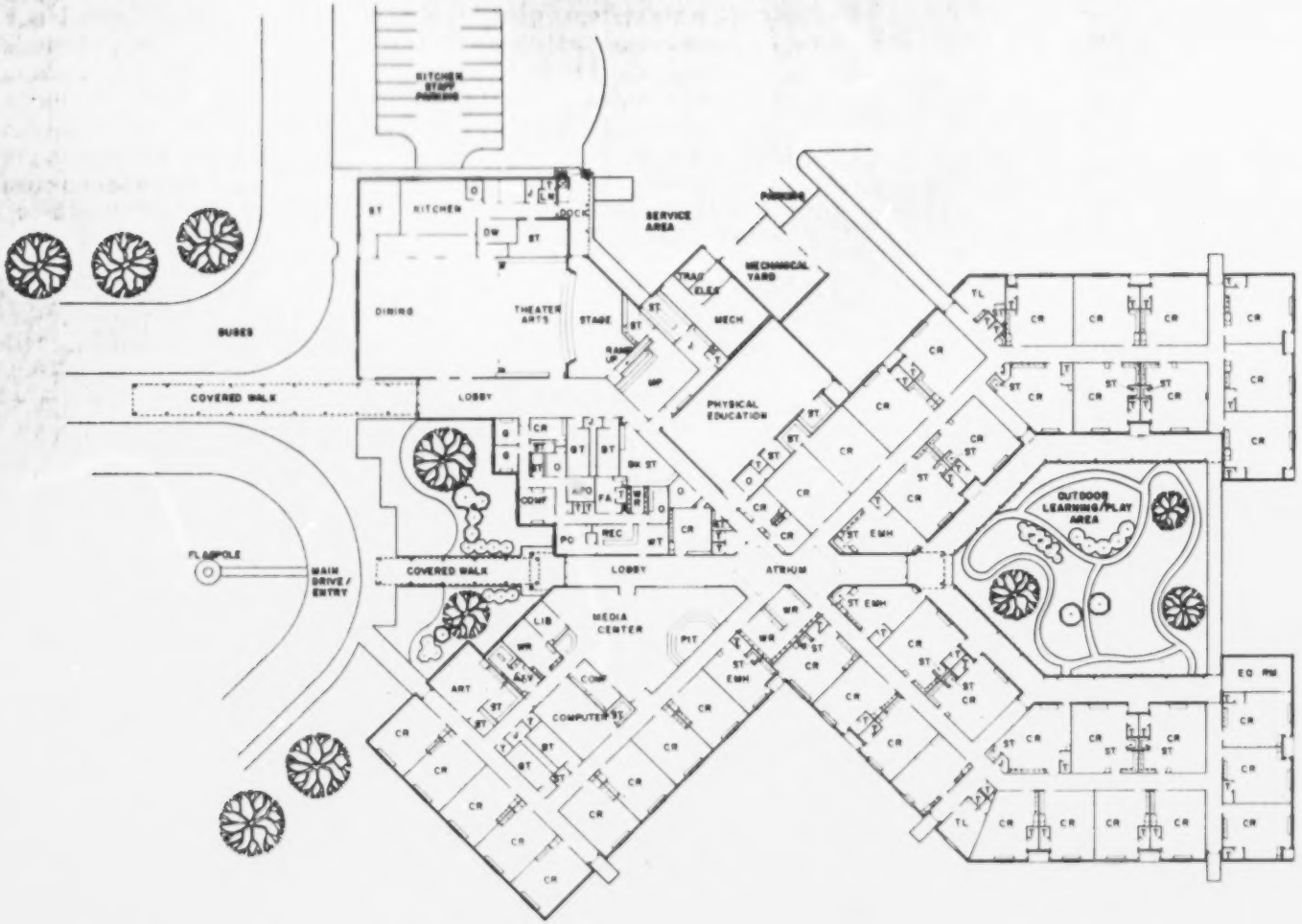
BEST COPY AVAILABLE

photograph by: J. Weiland Fine Photography

The Thomasville Primary site is well landscaped and accessed by separate driveways for buses and cars along a common covered walkway. A central service area for deliveries to the kitchen/janitorial supply rooms, and service to the mechanical equipment is located away from student activities. The main entrance corridor leads to a central atrium naturally lit by two skylights. This atrium is a central axis to each corridor within the school. Kindergarten classrooms surround an outdoor learning/play area that has a variety of plants, winding pathways, play pads, an amphitheater, etc. A folding partition separating the dining and theater arts space opens for use during large group presentations on stage.

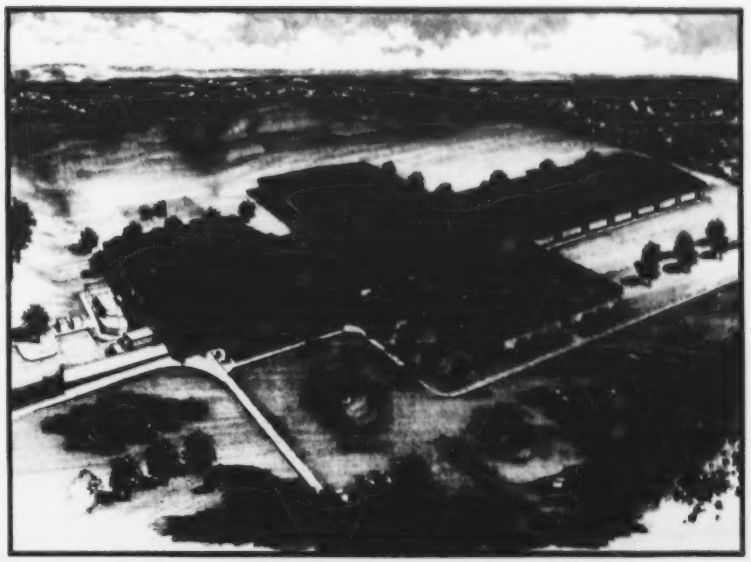


Administrative Unit	Thomasville City
Grade Organization	K-3
Approximate Capacity	750
Opening Date	August 1992
Architect	Paul T. Briggs, Architect
Landscape Architect	Paul T. Briggs, Architect
Structural Engineer	Sutton-Kennerly and Associates
Mechanical/Electrical Engineer	McKnight-Smith Engineers
Acreage of Site	20 Acres
Building Square Footage	101,900 SF
Land Cost	$450,000
Building Cost	$5,371,000
Equipment and Furnishings Cost	$150,000



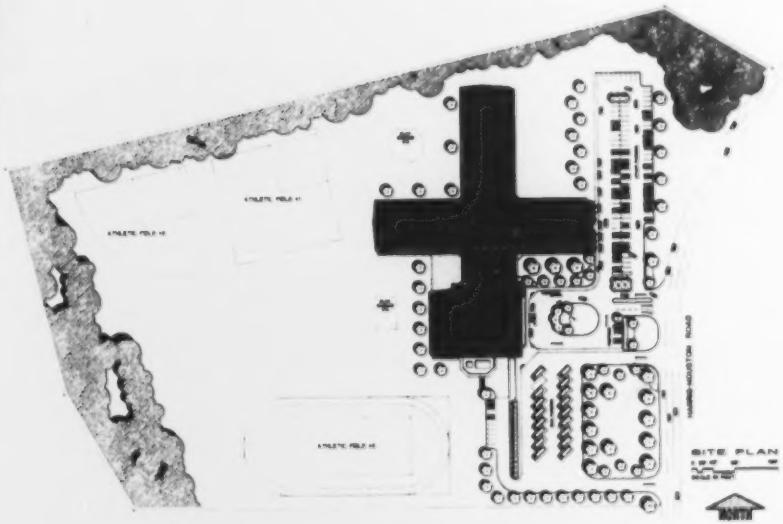
BEST COPY AVAILABLE

University Meadows Elementary

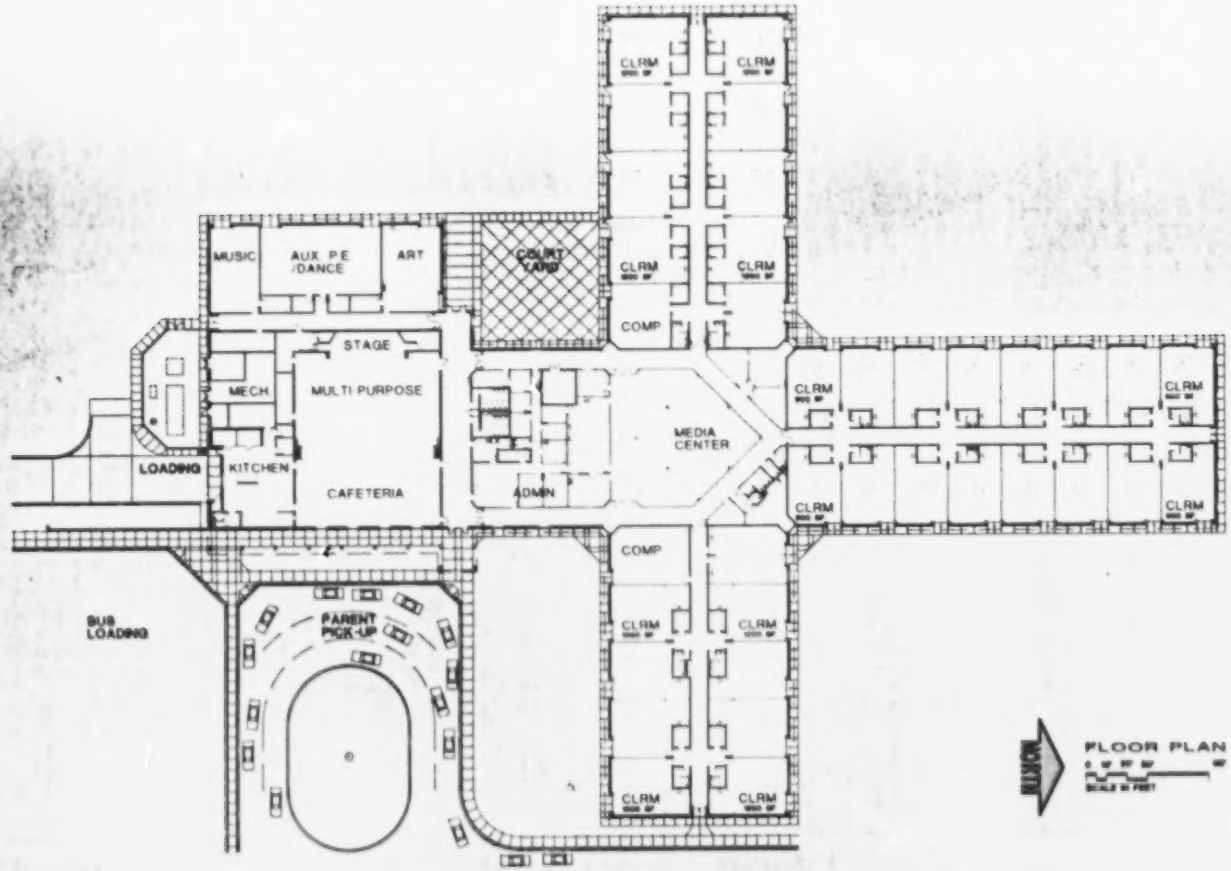


photograph by: Orkan Architecture

University Meadows Elementary is well located on the site dedicating the front to parking and the back to play areas. Service access is also well located and screened from the public and the students. The main lobby separates the cafeteria/multi-purpose room from the classroom wings to allow after hours community use of the school. The media center is located at the center axis to the classroom corridors and each classroom has a storage closet and toilet facility. Group toilets are located in the main lobby near the cafeteria and in the corridor around the media center. There is also a separate corridor dedicated to art, music and dance.



Administrative Unit	Charlotte-Mecklenburg
Grade Organization	K-5
Approximate Capacity	750
Opening Date	August 1992
Architect	Orkan Architecture, P.A.
Landscape Architect	Jordan Design Collaborative, P.A.
Structural Engineer	Browning-Smith Associates, P.A.
Mechanical Engineer	McKnight-Smith Engineers, Inc.
Electrical Engineer	Bullard Associates, Engineers
Acreage of Site	27 Acres
Building Square Footage	77,000 SF
Land Cost	N/A
Building Cost	$3,530,450
Equipment and Furnishings Cost	$200,000

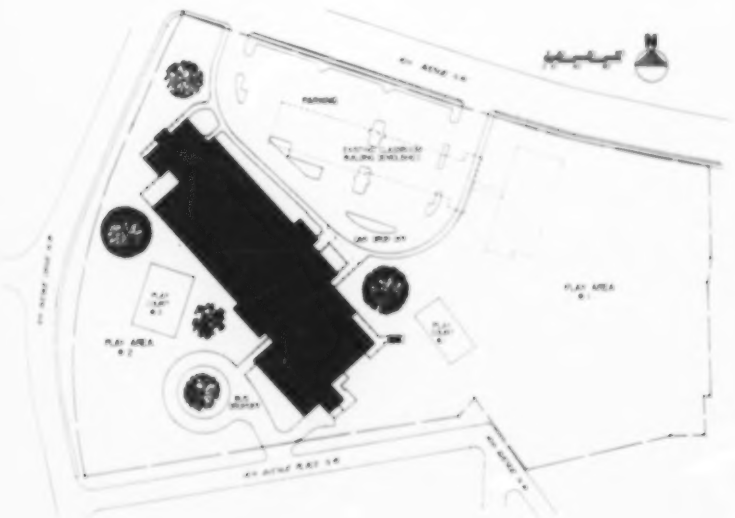


BEST COPY AVAILABLE

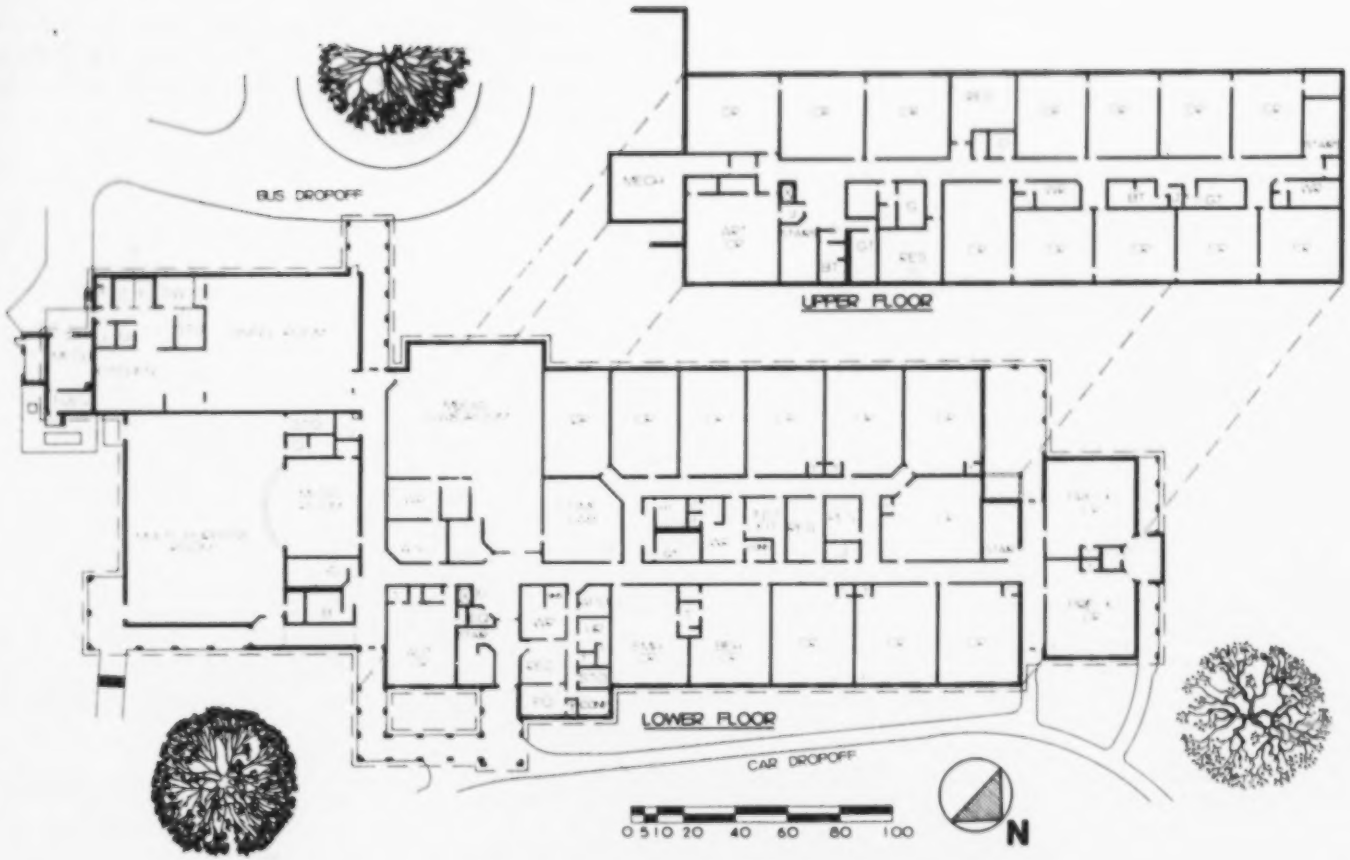
Viewmont Elementary

photograph by: J. Weiland Fine Photography

Viewmont Elementary is a two-story school replacing an existing school on a very small site. The location of the new building is on an angle within the site and allows separate driveways for buses and cars while leaving plenty of open play area easily accessed by the children without having to cross vehicular paths. Each floor provides workrooms and toilets for the teachers. An instructional kitchen is on the first floor and group toilets are well located near the stairways. The core facilities and the separate pre-kindergarten wing are designed for community and after-hours use.



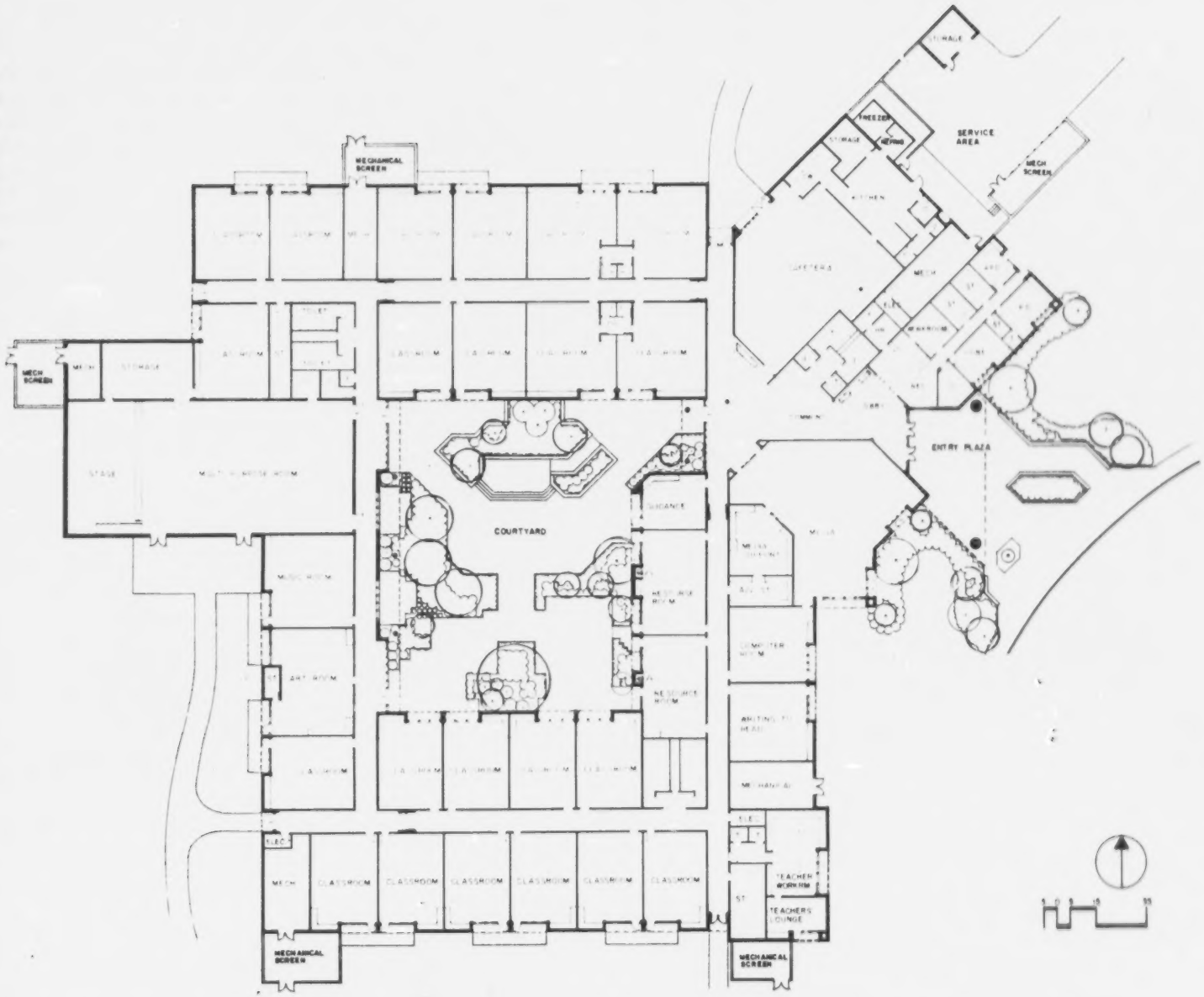
Administrative Unit	Hickory City
Grade Organization	Pre K-5
Approximate Capacity	600
Opening Date	August 1992
Architect	CBSA Architects
Landscape Architect	N/A
Structural Engineer	Taylor and Viola
Mechanical/Electrical Engineer	Purtle and Associates
Acreage of Site	8.91 Acres
Building Square Footage	68,922 SF
Land Cost	N/A
Building Cost	$3,902,364
Equipment and Furnishings Cost	$574,000


BUS DROPOFF
UPPER FLOOR
LOWER FLOOR
CAR DROPOFF
0 5 10 20 40 60 80 100
N

photograph by: Brad Farlow Inside Out Photography

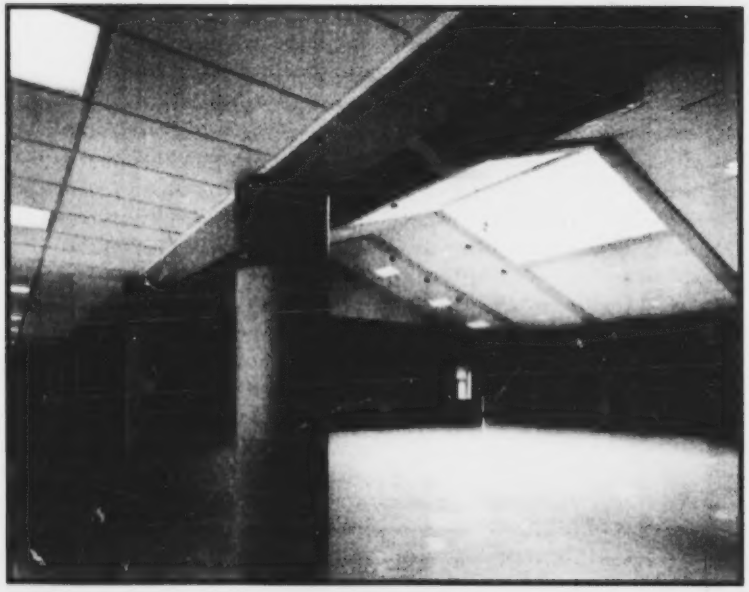
The Zeb Vance Elementary School orients classroom wings around a central courtyard used for informal teaching and small group gatherings. This courtyard provides natural light to the interior classrooms and is viewed from several locations within the building. The main lobby/ commons area accesses the media center, cafeteria and administration. The lobby also features a "replica wall" which recalls in contemporary form architectural elements of the former neoclassical school building. The multi-purpose room is located on the opposite side of the school from the commons area, closer to the outdoor play fields.

Administrative Unit	Vance County
Grade Organization	K-6
Approximate Capacity	600
Opening Date	September 1992
Architect	Smith Sinnett Associates, P.A.
Landscape Architect	McNeely Associates, P.A.
Structural Engineer	Greiner, Inc.
Mechanical/Electrical Engineer	Adcock Engineering
Acreage of Site	31 Acres
Building Square Footage	63,760 SF
Land Cost	$711,600
Building Cost	$3,290,000
Equipment and Furnishings Cost	$140,000



BEST COPY AVAILABLE

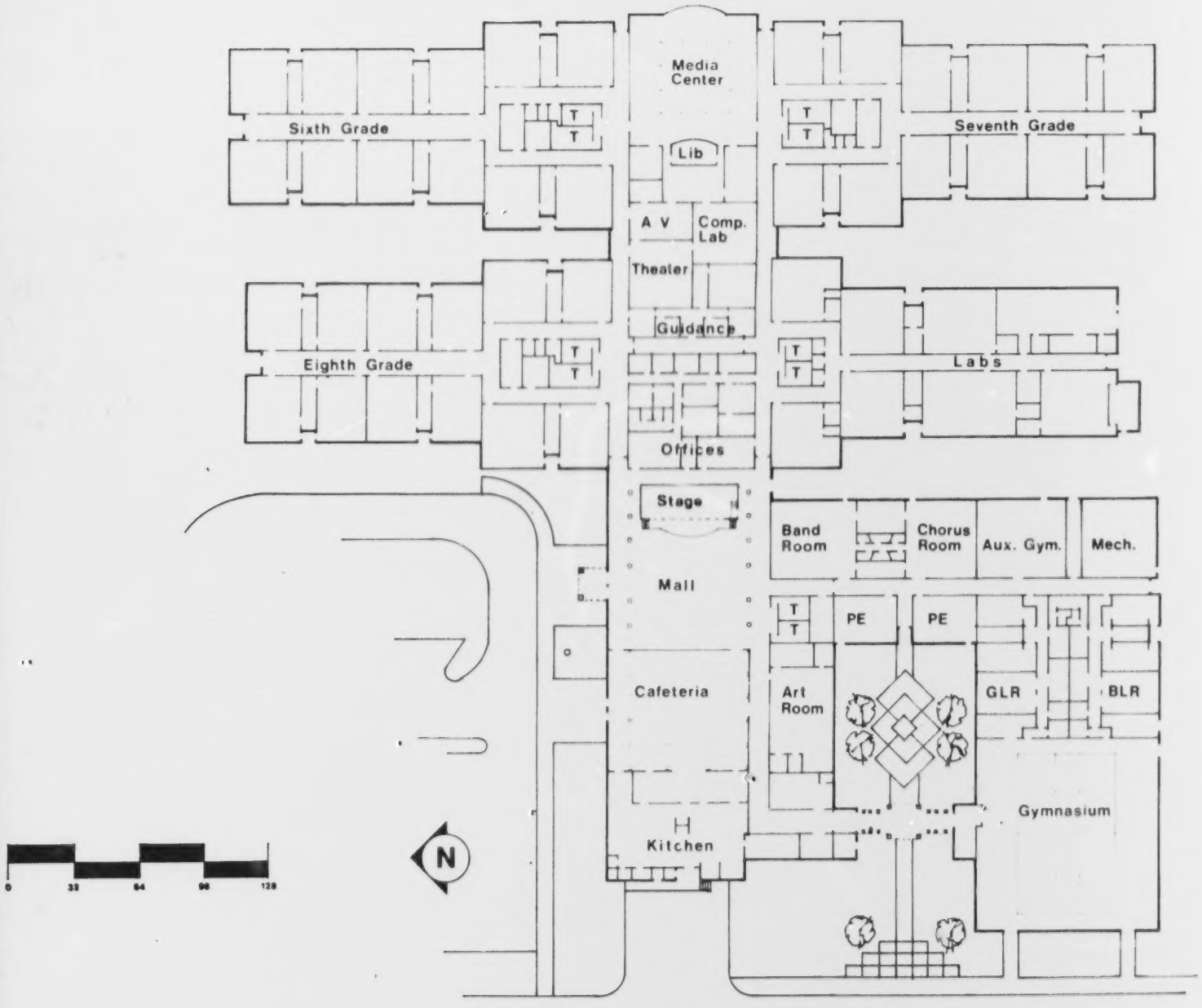
J. N. Fries Middle



photograph by: JoAnn Sieburg-Baker Photographer

J.N. Fries Middle is located on a deep rectangular site. The building and athletic field are separated by a creek which bisects the center of the site. The building is designed around a central spine that contains the media center, the cafeteria, administration and an entry mall that doubles as an auditorium with a stage. Four classroom wings, identified by grade level or vocational labs, project from the spine. Each wing contains group toilets, conference rooms, teacher workrooms and offices. Another wing housing the gymnasium, band, art and music rooms was designed for after-hours community use. Entry into this wing is through an exterior courtyard near the bus loading area.

Administrative Unit	Cabarrus County
Grade Organization	6-8
Approximate Capacity	1,200
Opening Date	August 1990
Architect	Wheatley / Williams Architects
Landscape Architect	Brian Sigmon Landscape Architecture, P.A.
Structural Engineer	Browning-Smith Associates, P.A.
Mechanical/Electrical Engineer	McKnight-Smith Engineers, Inc.
Acreage of Site	50 Acres
Building Square Footage	146,555 SF
Land Cost	N/A
Building Cost	$6,657,198
Equipment and Furnishings Cost	$57,750

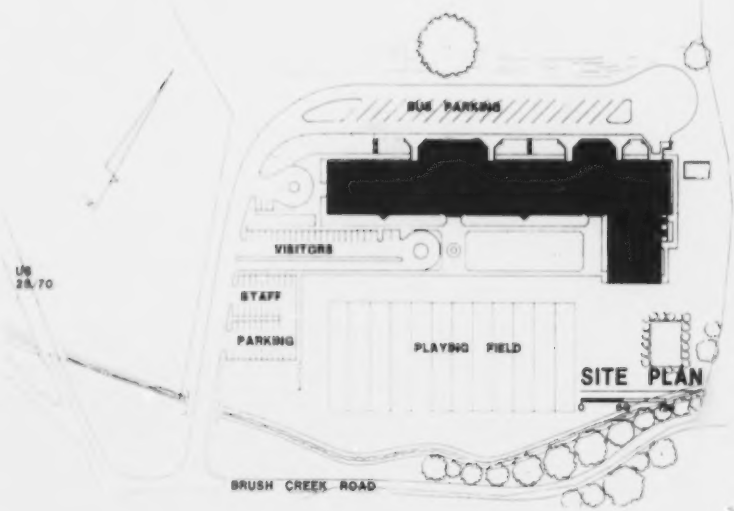


BEST COPY AVAILABLE

Madison Middle

photograph by: J. Weiland Fine Photography

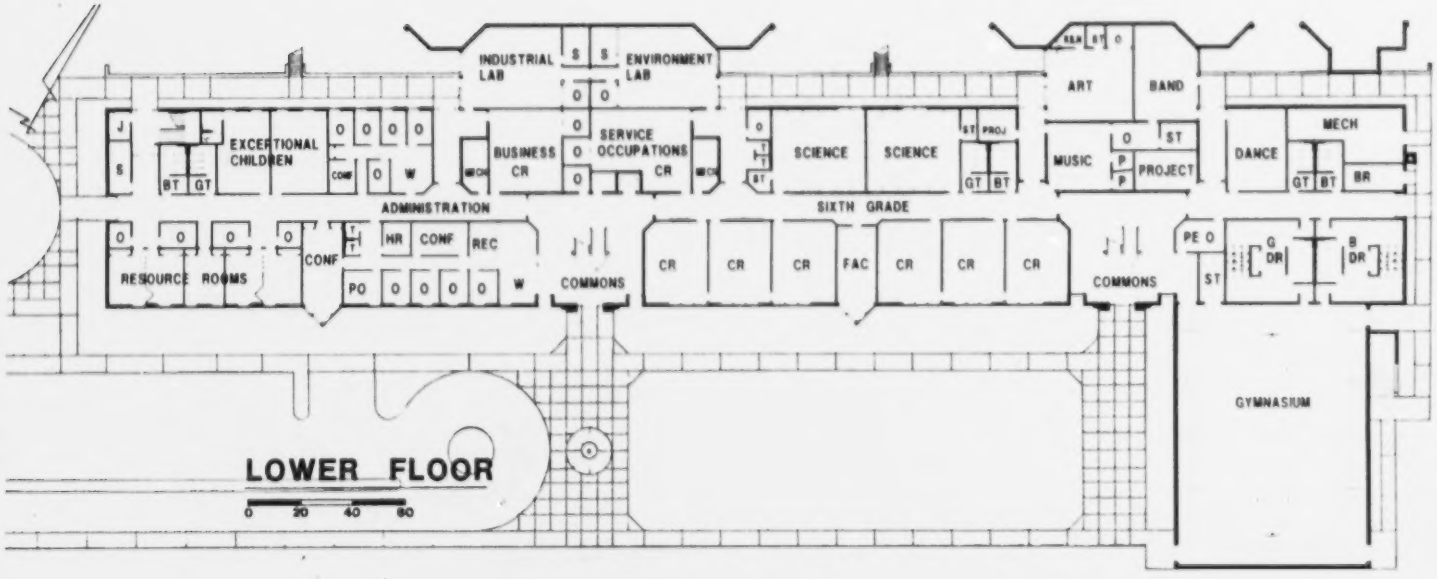
Madison Middle is a school funded by the State's "Critical Needs" Program. The building is a two-story facility set on a site where the topography allows both floor levels to exit directly onto grade. Classrooms are arranged by grade level and centrally located around the learning resource center and vocational labs. Each classroom grouping includes group toilets, faculty offices and workrooms. Administration, student affairs, and exceptional children are on the lower floor for easy access and control. The gymnasium, cafeteria, and art education rooms are designed for after-hours community use to be accessed through a two-story commons area.



SITE PLAN

Administrative Unit	Madison County
Grade Organization	6-8
Approximate Capacity	700
Opening Date	August 1992
Architect	Wayne D. Roberts, AIA
Landscape Architect	N/A
Structural Engineer	Day Engineering Services
Mechanical/Electrical Engineer	Gillam Engineering
Acreage of Site	21 Acres
Building Square Footage	93,000 SF
Land Cost	$290,000
Building Cost	$5,185,000
Equipment and Furnishings Cost	$350,000

UPPER FLOOR



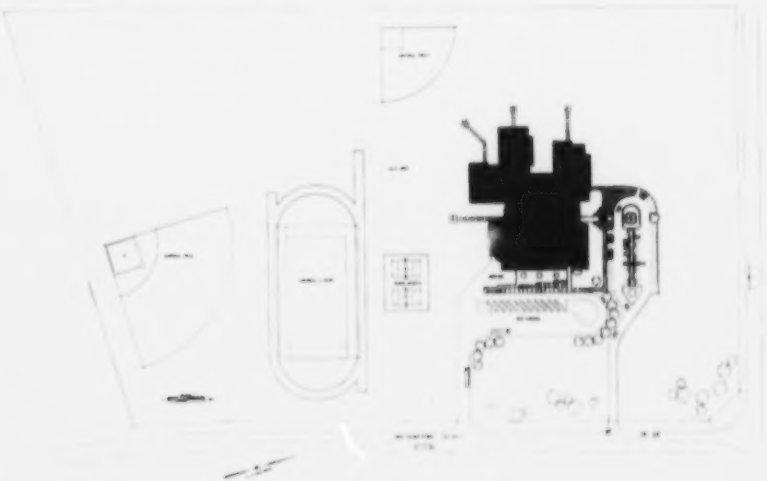
LOWER FLOOR

BEST COPY AVAILABLE

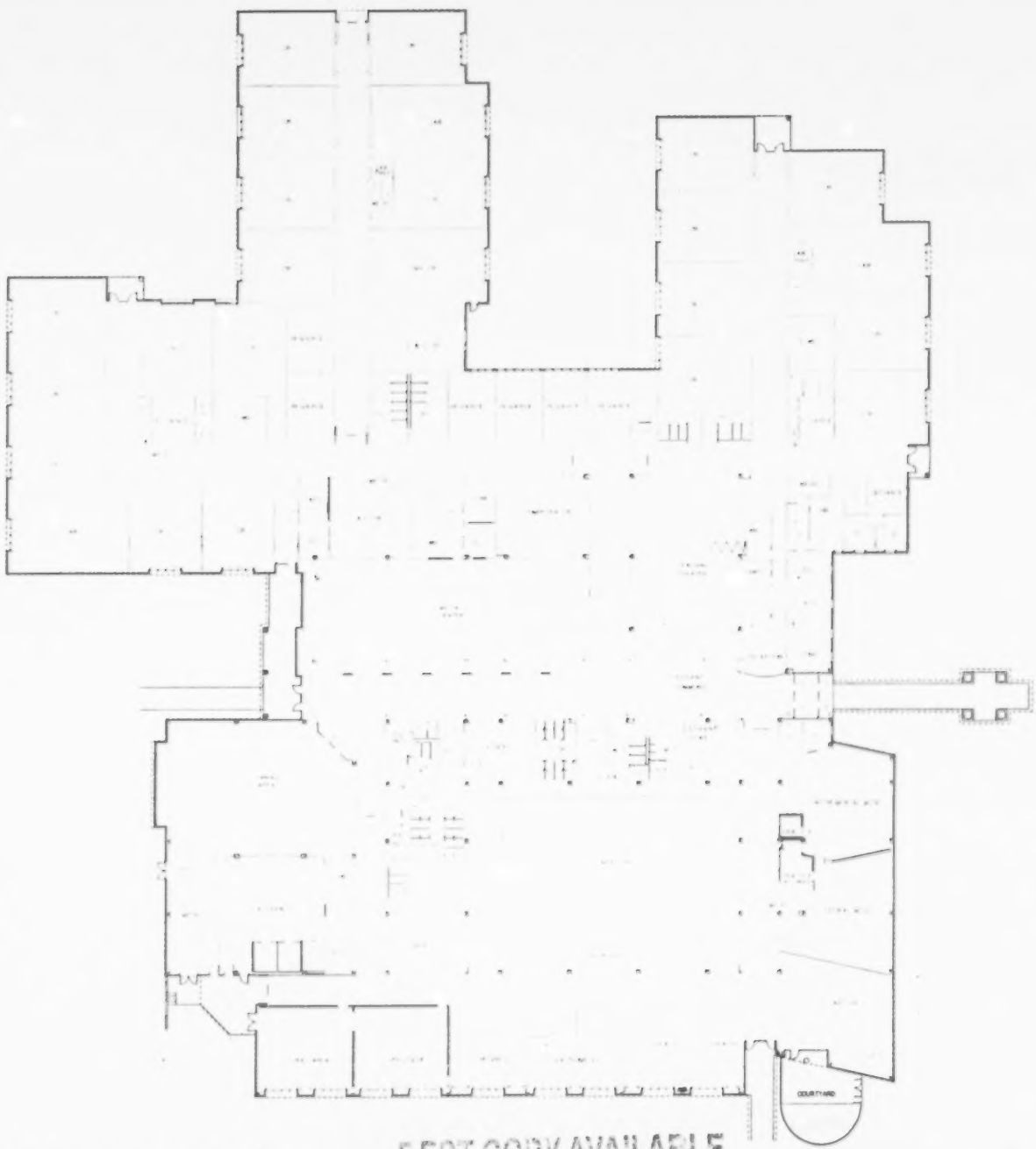
West Hoke Middle

photograph by: Gordan H. Schenck, Jr. Photographer

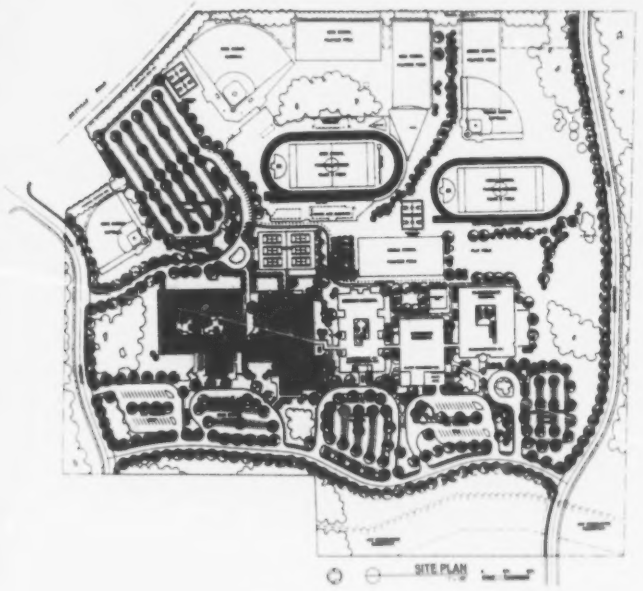
West Hoke Middle is a school funded by the State's "Critical Needs" Program. The building is divided into two sections by a large student commons area. One section has noisy activities including the cafeteria, gymnasium, vocational labs, and art education rooms. The other section has quieter activities including the media center, administration, a teaching theater, and classrooms. The classrooms are grouped together on corridors by different grade levels with a faculty lounge and group toilets located near each corridor. This building was designed to be easily expanded by sizing the central core facilities to accommodate 800 students, while the classroom wings accommodate 600 students.



Administrative Unit	Hoke County
Grade Organization	6-8
Approximate Capacity	600
Opening Date	December 1991
Architect	Boney Architects, Inc.
Landscape Architect	N/A
Structural Engineer	Henry Von Oesen & Associates, Inc.
Mechanical/Electrical Engineer	Henry Von Oesen & Associates, Inc.
Acreage of Site	40 Acres
Building Square Footage	86,180 SF
Land Cost	$ 160,000
Building Cost	$4,178,003
Equipment and Furnishings Cost	$225,000



BEST COPY AVAILABLE



Leesville Road High is part of a K-12 campus planned on a 120 acre site in Wake County. Site development includes bus and parent drop-offs, staff and student parking, athletic fields, and an area for a future football stadium. The high school has a two-story classroom building section connected by a lobby to a one-story gymnasium, art education, and administration section. Classroom corridors are arranged around an interior landscaped courtyard that can be used for outdoor eating and small group gatherings. All buildings are connected by an enclosed corridor and have similar gabled entrances on the exterior facades to provide a consistent design character for all buildings on the campus.

rendering by: SHWC, Inc.

Administrative Unit	Wake County
Grade Organization	9-12
Approximate Capacity	1,600
Opening Date	April 1993
Architect	Small Kane Architects, P.A.
Consulting Architect	SHWC, Inc.
Civil Engineers	William G. Daniels Associates
Structural Engineer	Lasater-Hopkins Engineers
Mechanical/Electrical Engineer	Douglas Y. Perry Associates
Acreage of Site	120 Acres
Building Square Footage	245,700 SF
Land Cost	$3,307,860
Building Cost & Equipment and Furnishings Cost	$11,963,000

70

71

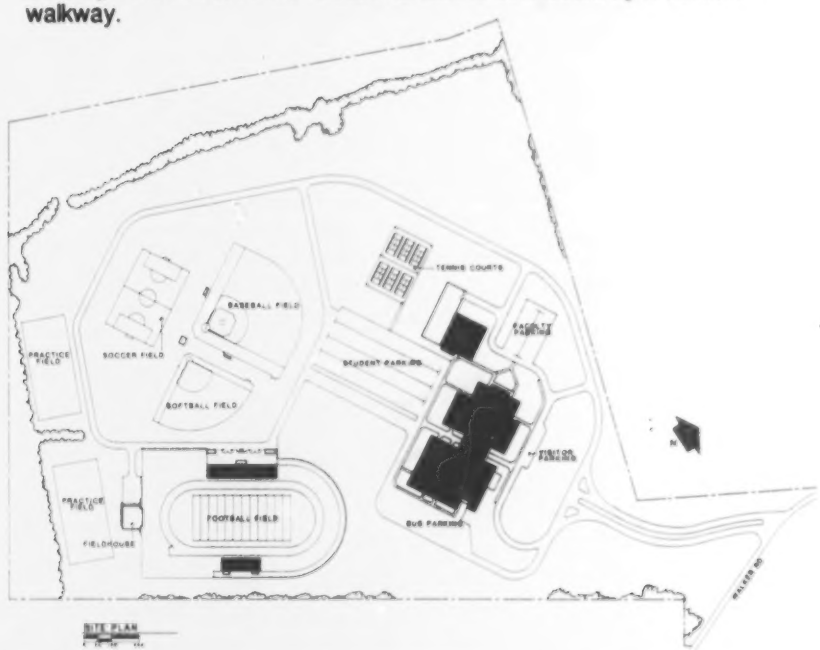
FIRST FLOOR PLAN
LEESVILLE ROAD
HIGH SCHOOL

BEST COPY AVAILABLE

Mount Pleasant High

photograph by: J. & B. Kluttz Photography, Inc

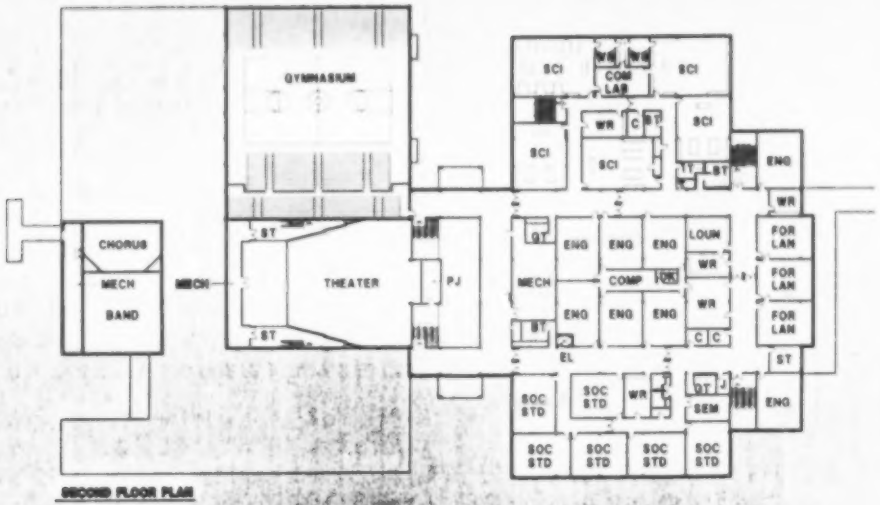
Mount Pleasant High was designed to accommodate 900 students with the ability to grow to a capacity of 1,100 students. A large commons area located at the heart of the school serves as an entrance lobby to all core facilities. The media center, classrooms, administration and guidance offices are grouped together on the north side of the commons to reduce travel distance between classrooms and to facilitate supervision by faculty and staff. The gymnasium, theatre, music rooms, and cafeteria, with their need for large spaces and inherently noisy activities, are located on the south side of the commons. A separate one-story building which houses the vocational labs is connected by a covered walkway.



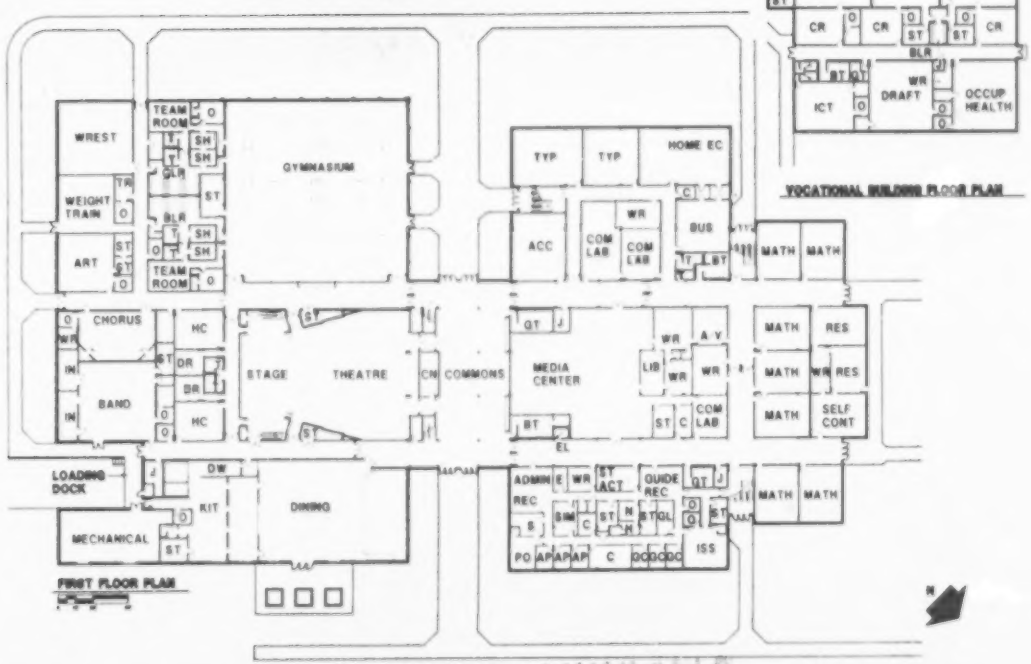
Administrative Unit	Cabarrus County
Grade Organization	9-12
Approximate Capacity	1,100
Opening Date	Fall 1991
Architect	George Griffin Associates
Landscape Architect	Jordan Design Collaborative
Structural Engineer	King Guinn Associates
Mechanical/Electrical Engineer	McKnight-Smith Engineers, Inc.
Acreage of Site	100 Acres
Building Square Footage	177,000 SF
Land Cost	$386,000
Building Cost	$8,303,000
Equipment and Furnishings Cost	$430,000

74

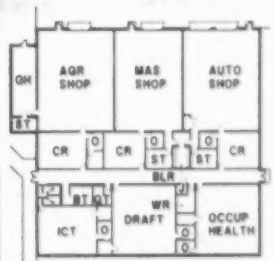
75



SECOND FLOOR PLAN



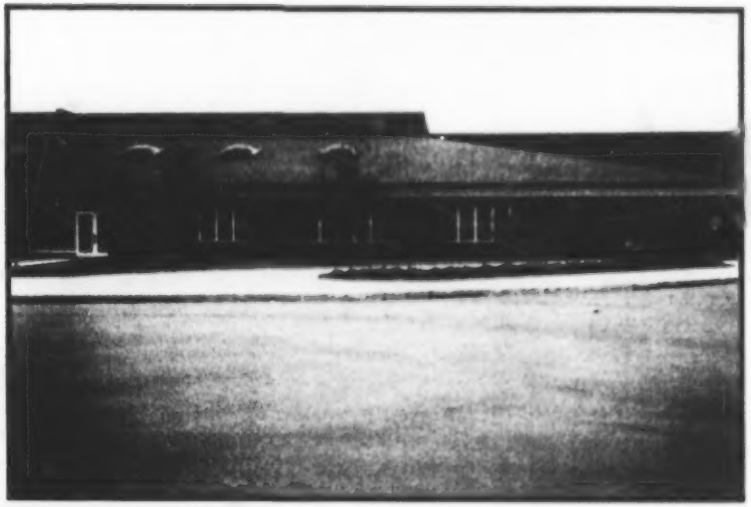
FIRST FLOOR PLAN



VOCATIONAL BUILDING FLOOR PLAN

BEST COPY AVAILABLE

Northampton County High - West



photograph by: Marjorie Acker, School Planning

Northampton High West is a school funded by the State's "Critical Needs" Program. The basic education plan was for a "no frills" but "nice looking, easy to maintain" school. A predominate feature of the school is the central complex containing an auditorium, cafeteria, and gymnasium opening to a large commons area. These spaces become the "public" part of the facility which can be used by the community either separately or in unison. The "learning" area of the school is departmentalized by the traditional high school curriculum in three classroom wings anchored to a central core of media center, student lockers and toilets. A fourth wing of student areas connects the core to the public spaces.

Administrative Unit	Northampton County
Grade Organization	9-12
Approximate Capacity	500
Opening Date	August 1991
Architect	Skinner, Lamm, Hood & Highsmith
Landscape Architect	Ralph Graham
Structural Engineer	Gardner, McDaniel & Stewart
Mechanical/Electrical Engineer	Fenner & Proffitt
Acreage of Site	67 Acres
Building Square Footage	100,000 SF
Land Cost	$250,000
Building Cost	$6,147,390
Equipment and Furnishings Cost	$140,000
Funded by Critical Needs	

BEST COPY AVAILABLE

Schools of Interest Photographs

PHOTO 1: Interior Photo of Main Entrance With Colorful Kites
Morrisville Elementary School in Wake County
Designed by Doggett Architects
Photograph by Doggett Architects

PHOTO 2: Interior Photo of a Typical Classroom With Casework
Supply Elementary School in Brunswick County
Designed by Boney Architects
Photograph by Boney Architects

PHOTO 3: Exterior Photo of an Outdoor Instructional Courtyard
Thomasville Primary in Thomasville City
Designed by Briggs & Matthews, Architects
Photograph by J. Weiland Fine Photography

PHOTO 4: Exterior Photo Taken During an Early Evening Sunset
Madison Middle School in Madison County
Designed by Woodard & Roberts, Architects
Photograph by J. Weiland Fine Photography

PHOTO 5: Photo of a Rendered Perspective Drawing of the School
Broughton High School in Wake County
Designed by Small Kane Architects, P.A.
Rendering by Small Kane Architects, P.A.
Photograph by Jim Sink Artech, Inc.

PHOTO 6: Exterior Photo Taken During a Special School Event
F. Porter Graham High School in Chapel Hill City
Designed by Obrien/Atkins Associates, P.A.
Photograph by Rick Alexander and Associates, Inc.

PHOTO 7: Interior Photo of a Typical Classroom
Isabelle Wolfe Development Center in Monroe City
Designed by Boney Architects
Photograph by Gordan H. Schenck, Jr. Architectural Engineering Photography

PHOTO 8: Interior Photo of the Auditorium
Polk High School in Polk County
Designed by Cort Architectural Group
Photograph by J. Weiland Fine Photography

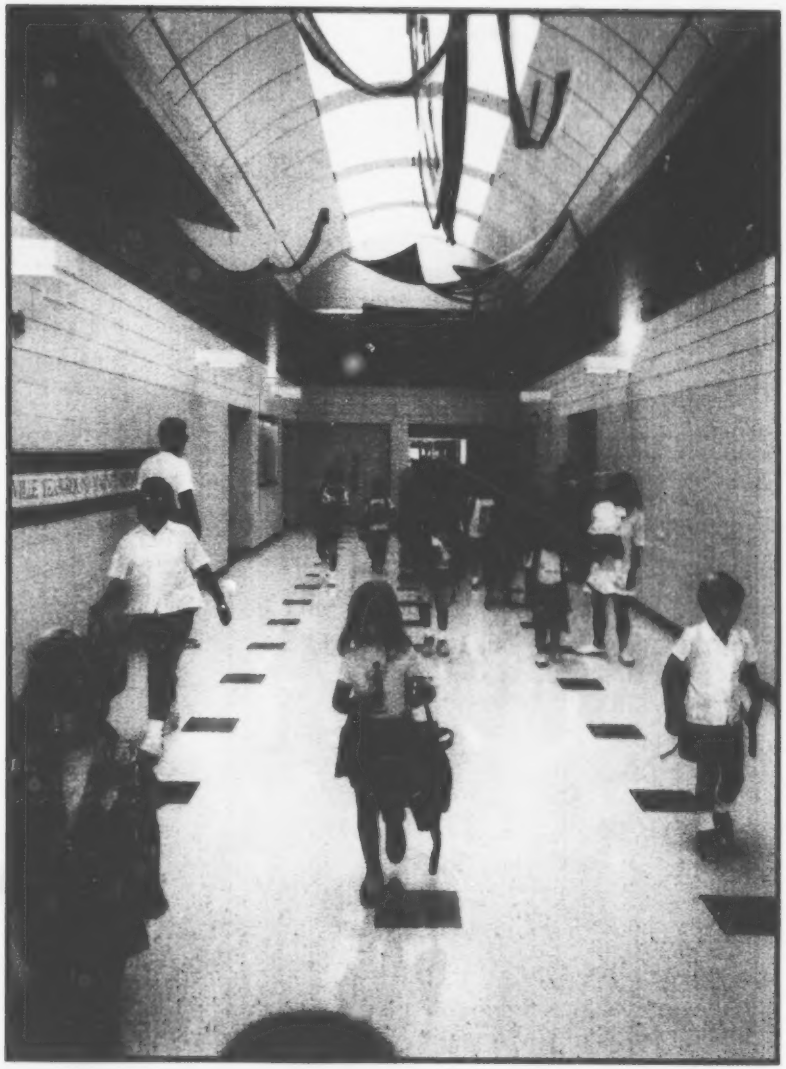


PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

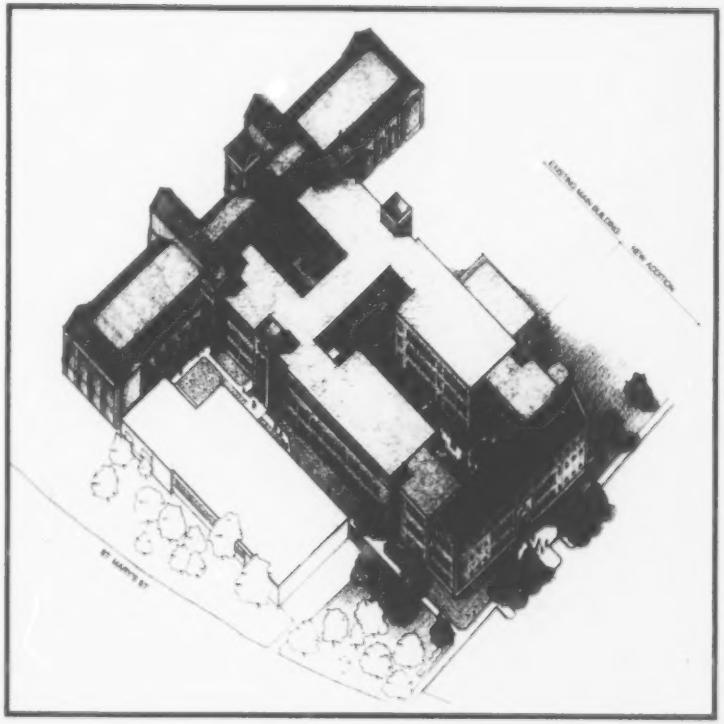


PHOTO 5

PHOTO 6

U 88

U 89

PHOTO 7

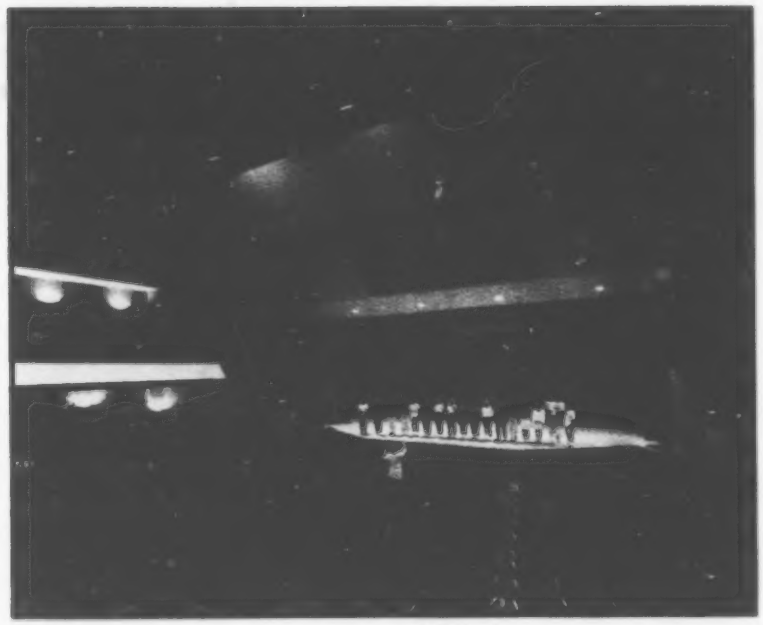


PHOTO 8

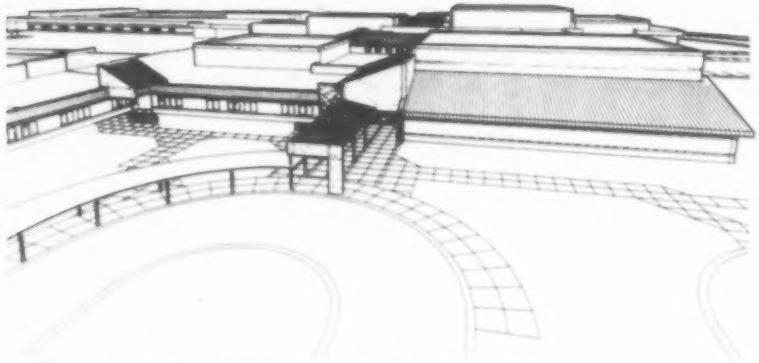
Standard Review Items

School Planning reviews hundreds of school designs in a year. The following list includes typical design items that are written about frequently:

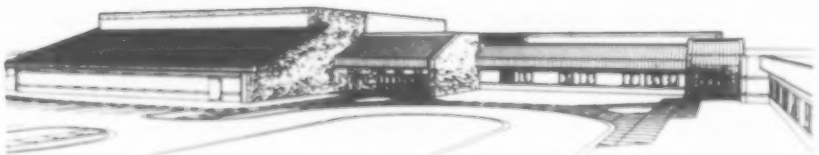
- Keep bus loading and parking separate from the parent/student drop-off and staff parking. Provide covered walkways to all major drop-off areas and between separate buildings.
- Plan site designs that prevent students and staff from crossing vehicular paths while accessing playgrounds or other buildings on campus. Plan kitchen locations where delivery trucks can share the bus parking area and be out of the way of pedestrian traffic.
- Plan classrooms and core facilities that meet our recommended standards on square footage with the capability for future expansion of these areas on new school facilities. Minimum width of a standard classroom is 24 feet.
- Provide adequate corridor widths throughout the school with group toilets accessible within two hundred feet of all spaces. Group toilets should have four or more flushable fixtures and be designed to meet the new ADA Standards.
- Administration areas should provide a health room adjacent to the receptionist for ease of supervision and access by parents.
- Handicap accessibility meeting ADA Standards should be provided to all areas within the school, including stages and atheletic facilities.

- Natural light should be provided into all core areas either by windows, skylights, or clerestories depending on their locations.
- Door projections into the corridors should not exceed 7 inches and smoke doors should have wall mounted magnetic hold-open devices.
- Construction detailing should include low maintenance materials with a longer life expectancy.
- Install fluorescent and metal halide lighting fixtures throughtout the school instead of incandescent lighting fixtures. They use less energy and require less bulb replacement.
- Use remote switching of lighting fixtures in corridors, restrooms, and common areas. Key operated switches may be used but are not preferred.
- Design all new school facilities with a central heating and cooling system that is supplied from an oil-fired or gas-fired boiler with a central chiller. These systems have a lower life cycle cost factor and are less expensive to repair.
- School Planning does not approve of roof top mechanical units.

Apple Valley Middle & North Henderson High

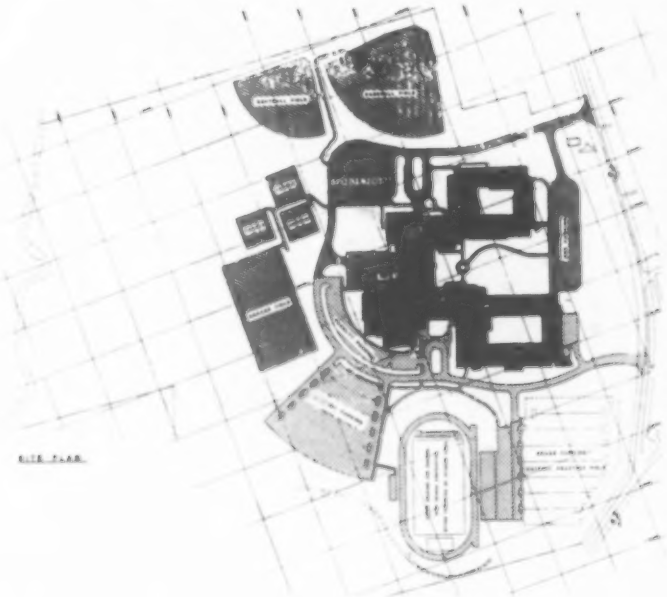


/EA - MIDDLE SCHOOL ENTRANCE



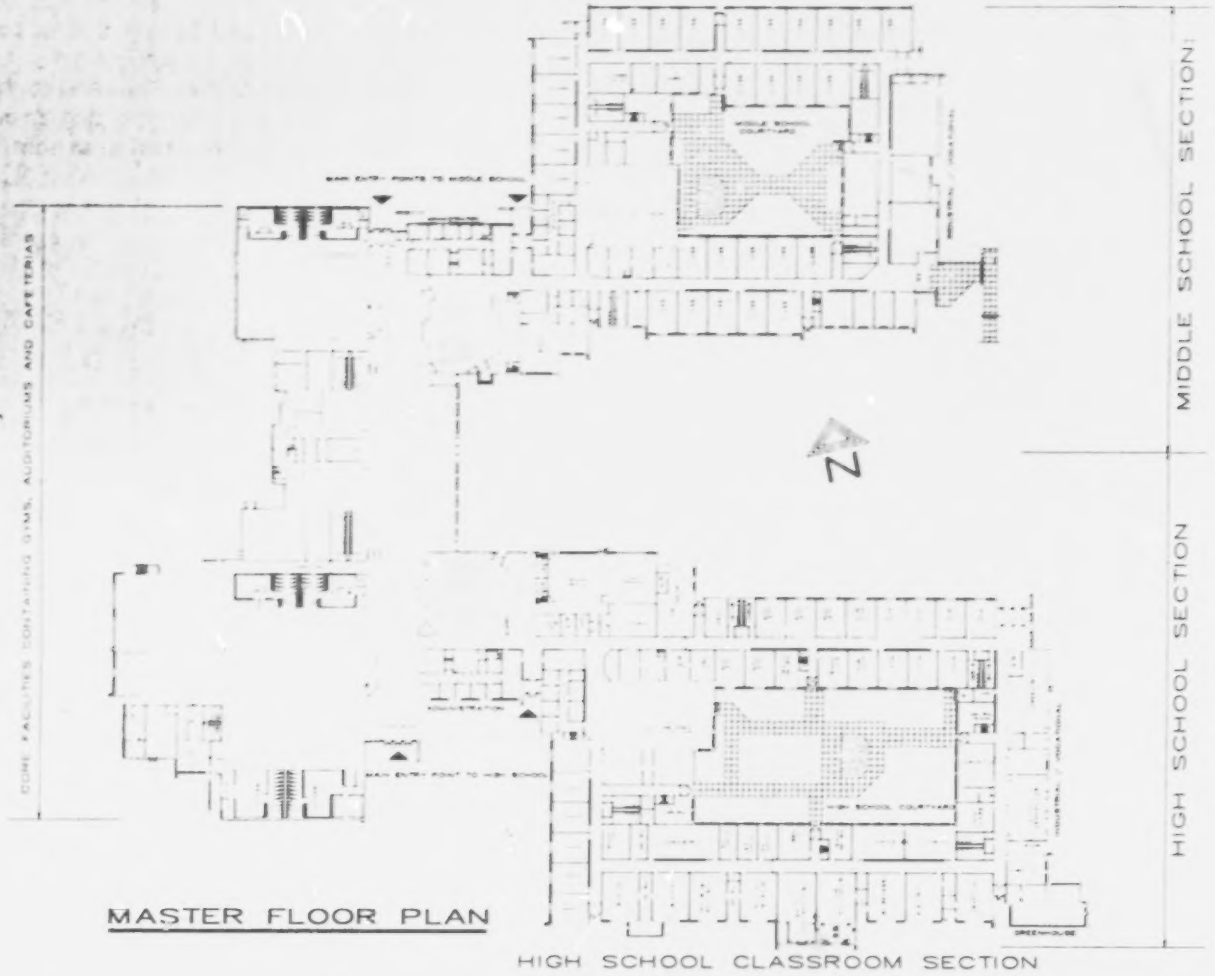
/EA - HIGH SCHOOL ENTRANCE

Apple Valley Middle and North Henderson High were designed to share the same site to reduce construction cost and land cost by having shared outdoor field activities and parking areas. The two schools also share the same kitchen facility with separate serving lines and cafeterias. The campus is designed as one continuous "U-shaped" building with the core facilities for both schools located in the middle and each leg of the "U-shape" dedicated to the middle school or the high school. Each school is designed with double loaded corridors surrounding an interior courtyard and amphitheater. Bus service is in one area common to both schools.



computerized perspective by: Gary Byrne

Administrative Unit	Henderson County
Grade Organization	6-12
Approximate Capacity	1,900
Opening Date	Fall 1993
Architect	Foy, Lee, Moody & Associates, P.A.
Landscape Architect	John A. Broadbooks, ASLA
Structural Engineer	Sutton-Kennerly & Associates
Mechanical/Electrical Engineer	Forney Engineering, Inc.
Acreage of Site	92 Acres
Building Square Footage	267,000 SF
Building Cost	$16,554,000
Equipment and Furnishings Cost	N/A



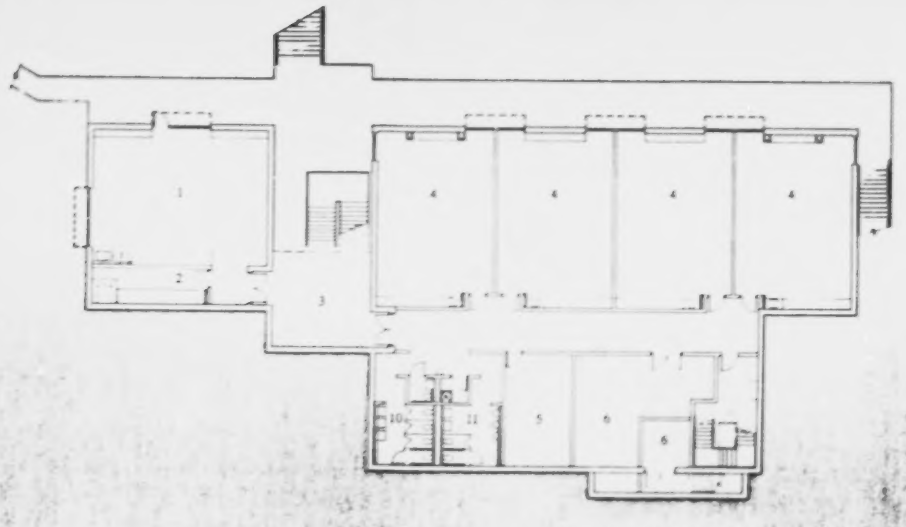
BEST COPY AVAILABLE

Frank Porter Graham Elementary

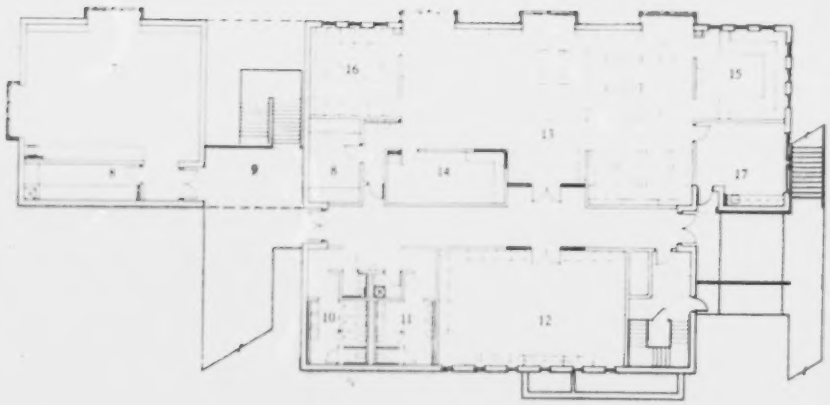
photograph by: Rick Alexander & Associates, Inc.

Frank P. Graham Elementary is a 16,400 S.F. media center and classroom addition designed to create a functional courtyard space between the existing campus buildings and uses materials that blend the campus together. The new construction site was limited to a steep sloping hillside bounded on the north by the proposed courtyard and on the south by a 100-year flood plain and playground. A two-story, linear building was designed to tuck into the hillside and connect to adjacent buildings with a covered walkway which included an outdoor covered stairway, to permit access to the lower play area from the courtyard.

Administrative Unit	Chapel Hill-Carrboro City
Grade Organization	K-5
Approximate Capacity	500
Opening Date	February 1991
Architect	O'Brien/Atkins Associates
Landscape Architect	O'Brien/Atkins Associates
Structural Engineer	GKC, Inc.
Mechanical/Electrical Engineer	O'Brien/Atkins Associates
Civil Engineer	Withers & Ravenel, PA
Acreage of Site	11 Acres
Building Square Footage	37,400 SF
Addition	16,400 SF
Renovation	21,000 SF
Land Cost	N/A
Building Cost	$2,500,000
Equipment and Furnishings Cost	N/A



LOWER LEVER FLOOR PLAN



UPPER LEVEL FLOOR PLAN

NO SCALE

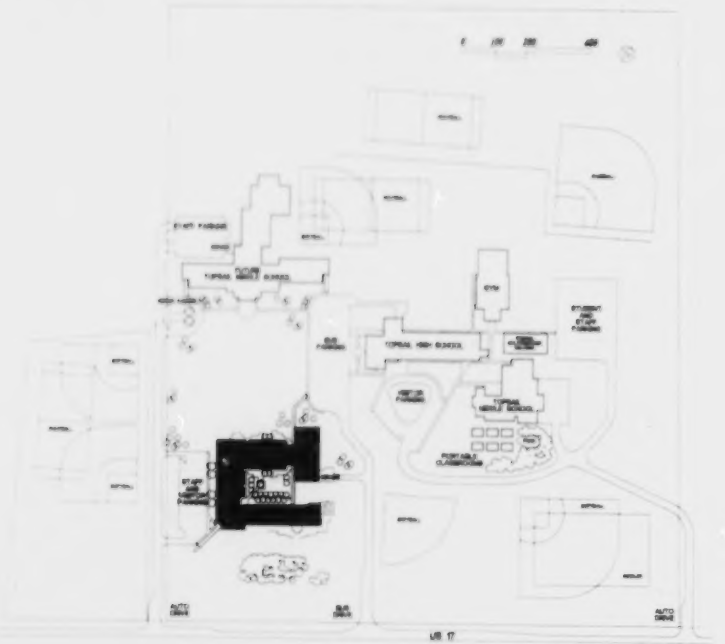
1	Art Classroom	9	Vestibule
2	Kiln Room	10	Girls Toilet
3	Lobby	11	Boys Toilet
4	Classroom	12	Computer Lab
5	General Storage	13	Media Center
6	Mechanical	14	Library Work Room
7	Music Classroom	15	Story Telling Room
8	Storage	16	Reference Area
		17	Teacher's Work Room

BEST COPY AVAILABLE

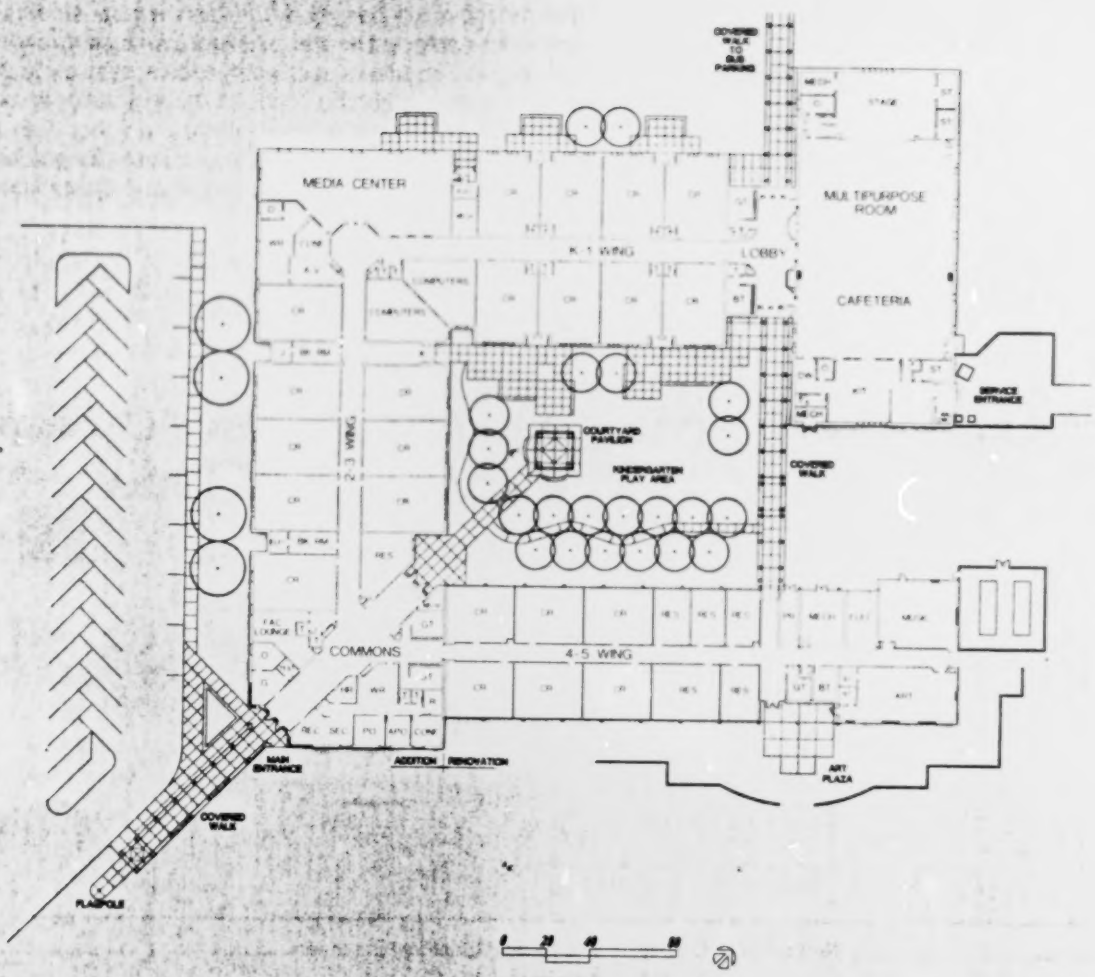
Topsail Elementary

photograph by: Rick Alexander & Associates, Inc.

Topsail Elementary consists of a 14,000 S.F. existing structure and 48,000 S.F. addition. The floor plan is C-shaped around a secured central courtyard/play area for the kindergarten children. There are separate classroom wings for grades K-1, 2-3, and 4-5. The administration suite and media center are centrally located for easy accessibility. The multi-purpose room and cafeteria are divided by a folding partition for flexibility in the main assembly spaces. Covered walkways at the main entrance and bus parking areas provide protection from inclement weather. Clerestory cupolas on the school recall the light house beacons of North Carolina coastal communities.

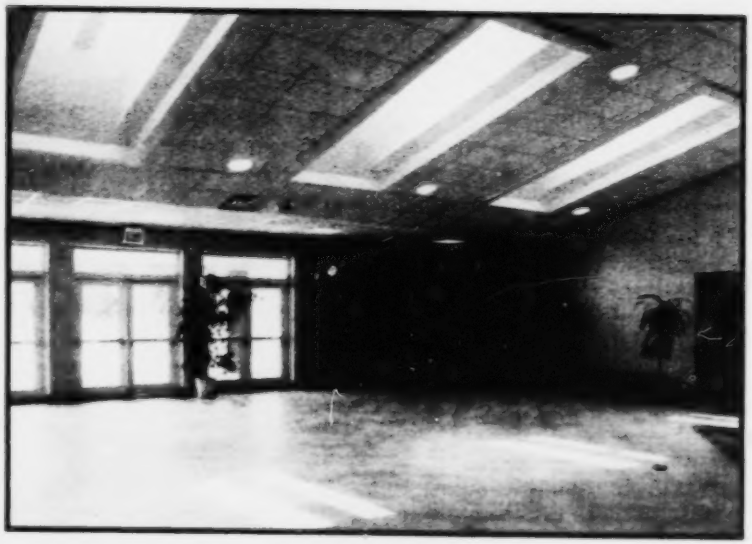


Administrative Unit	Pender County
Grade Organization	K-5
Approximate Capacity	450
Opening Date	August 1992
Architect	Little & Associates
Landscape Architect	N/A
Structural Engineer	Robert L. Hudson
Mechanical Engineer	David Shultz & Associates
Electrical Engineer	Steve Haas & Associates
Acreage of Site	24 Acres
Building Square Footage	62,987 SF
Land Cost	N/A
Building Cost	$3,285,303
Equipment and Furnishings Cost	N/A



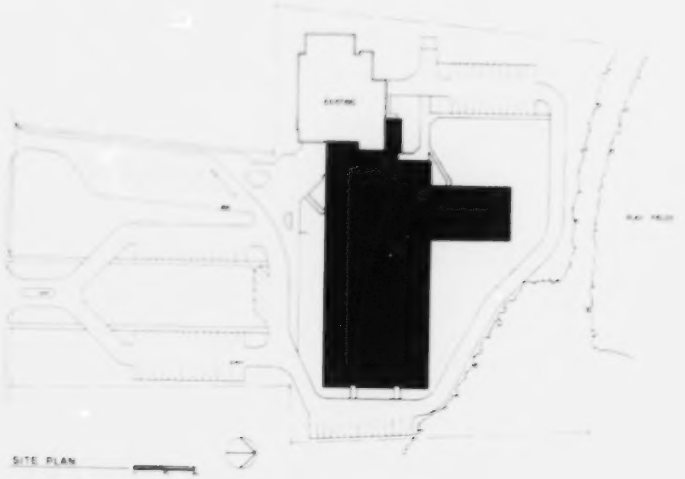
BEST COPY AVAILABLE

Conway Middle

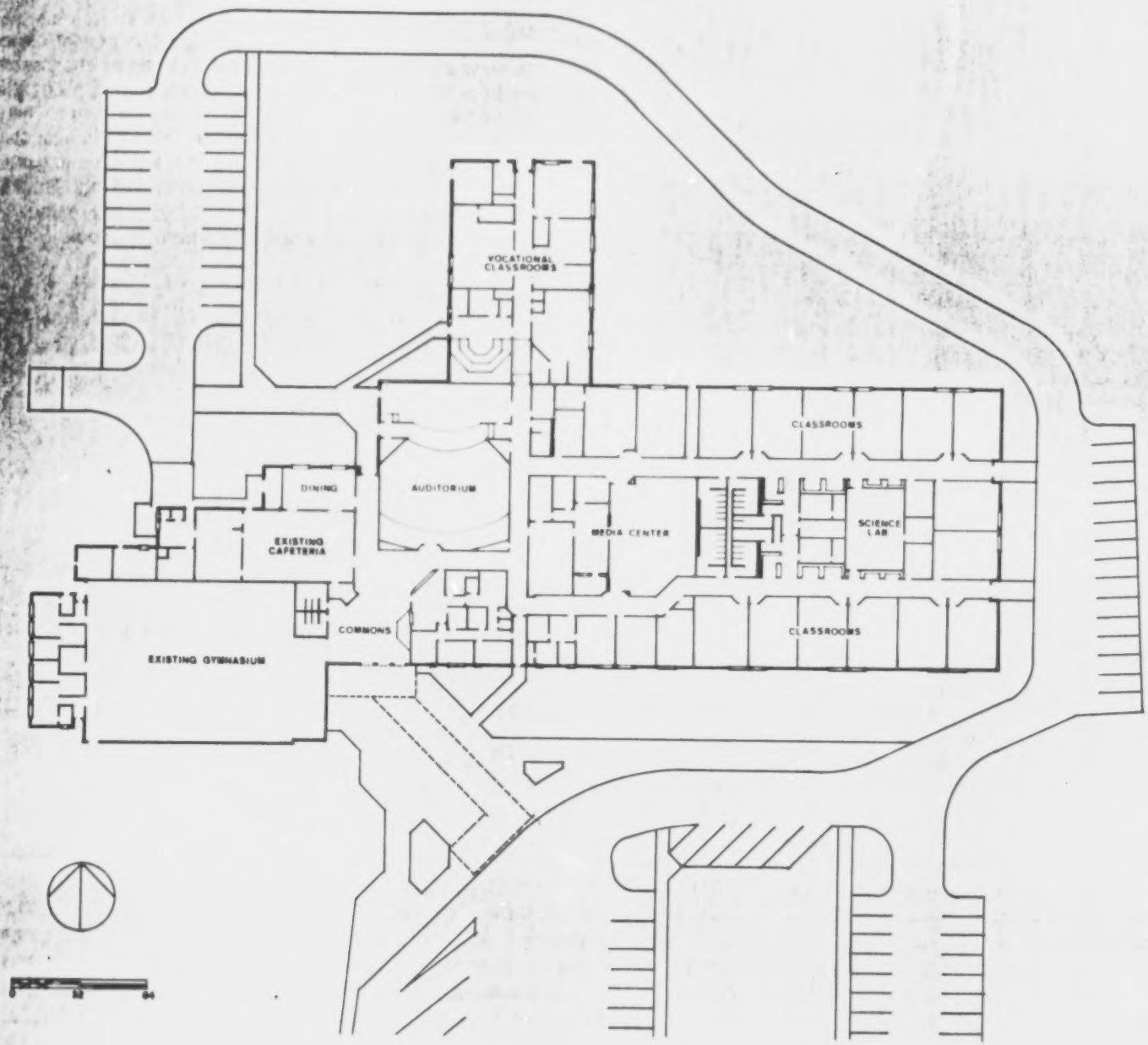


photograph by: Jim Sink Artech, Inc

The Conway Middle School addition replaces an existing 1920's two-story classroom building. A new central public use complex was developed in the design by building a new student commons and auditorium adjacent to the existing gymnasium and cafeteria. This commons areas allows each entity to be accessible to the public without disturbing the rest of the school. The instructional wing consists of a media center, student lockers, toilets, and science lab core surrounded by two general educational classroom blocks for grades 7 and 8. There is also a vocational classroom wing that projects from the rear of the facility.

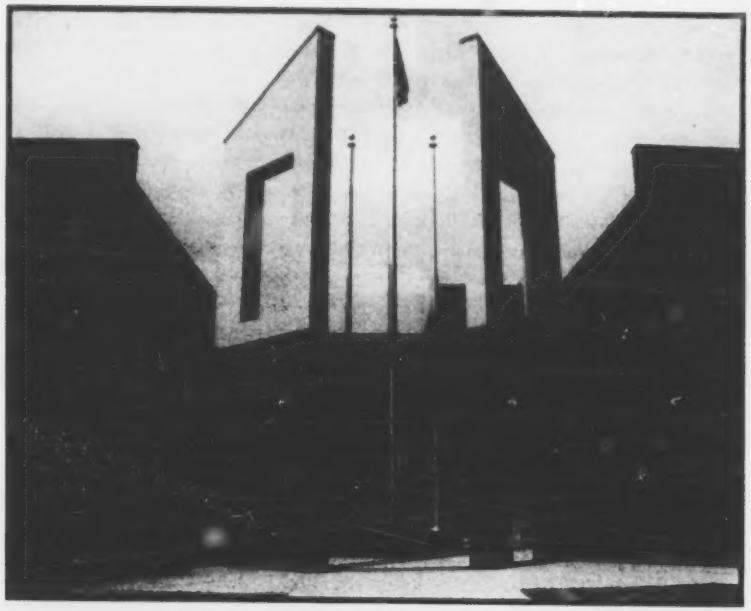


Administrative Unit	Northampton County
Grade Organization	6-8
Approximate Capacity	400
Opening Date	August 1991
Architect	Skinner, Lamm, Hood and Highsmith
Landscape Architect	Ralph Graham
Structural Engineer	Gardner, McDaniel and Stewart
Mechanical/Electrical Engineer	Fenner & Proffitt
Acreage of Site	13.6 Acres
Building Square Footage	50,000 SF
Land Cost	N/A
Building Cost	$3,395,724
Equipment and Furnishings Cost	$90,000



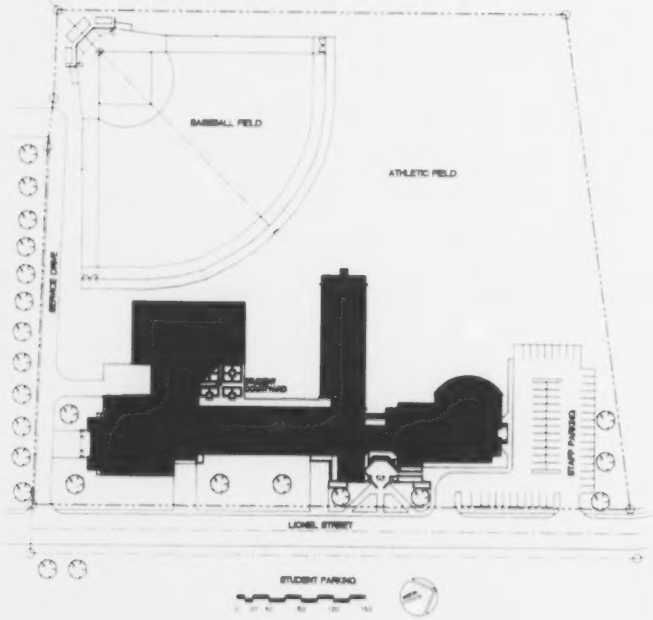
BEST COPY AVAILABLE

Goldsboro Middle



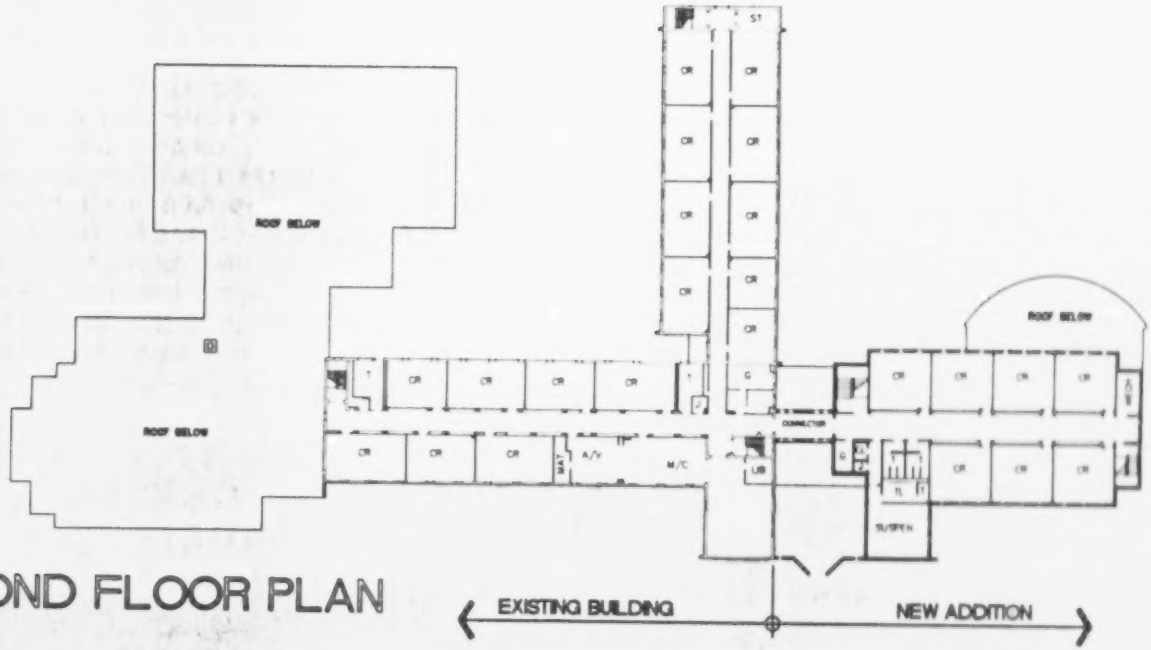
photograph by: Tolson & Assoicates

Goldsboro Middle was an addition and renovation project aimed at giving the original building a new "life" and appearance. The classroom addition was designed to create a main entrance by mirroring the "L-shape" of the existing building and creating an entry courtyard. This form helped connect the old and new buildings into one. An interior student commons and a cafeteria expansion were added to the existing building creating an exterior student courtyard behind the building. The 1960's curtain wall was removed from the original building and replaced by a brick/block wall creating a new appearance for the school.

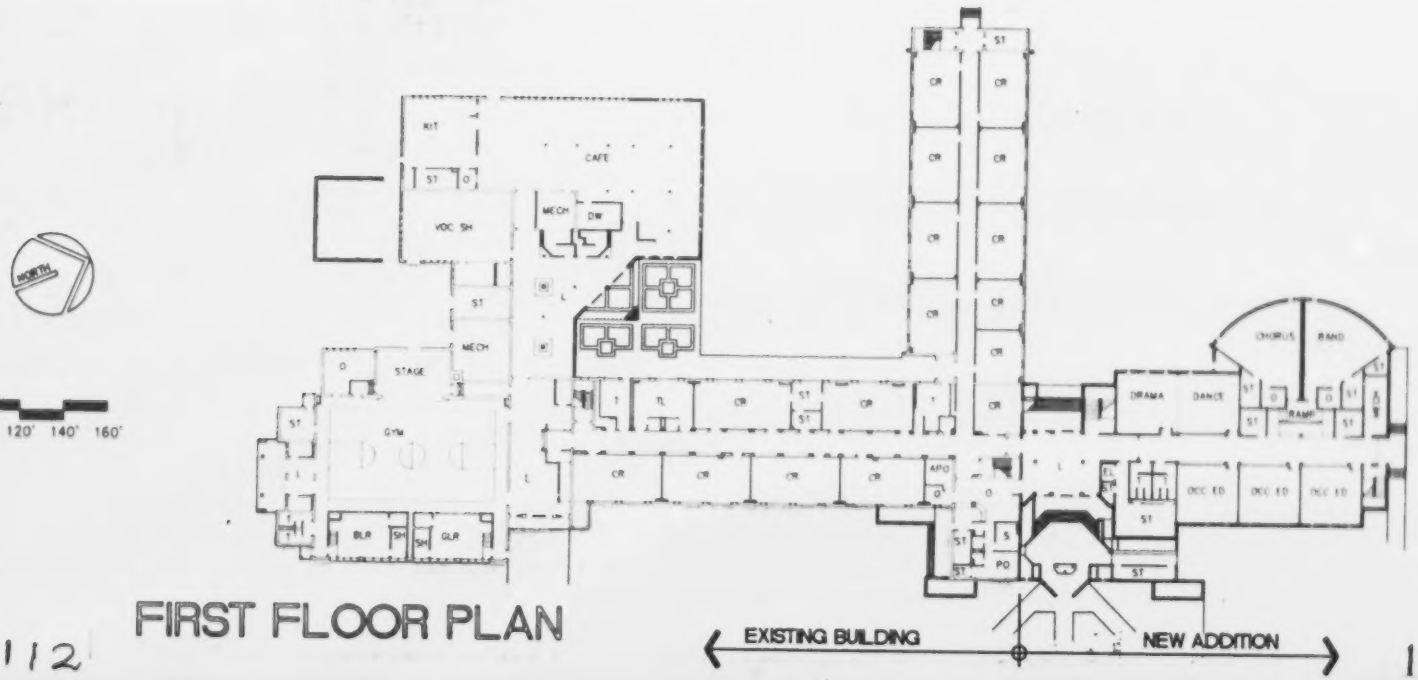


Administrative Unit	Wayne County
Grade Organization	6-8
Approximate Capacity	850
Opening Date	February 1991
Architect	Architects Tolson Associates, Inc.
Landscape Architect	N/A
Structural Engineer	Morrison & Sullivan Engineers
Mechanical/Electrical Engineer	Progressive Design Collaborative

Acreage of Site	7.06 Acres
Building Square Footage	91,278 SF
Existing	62,656 SF
Classroom Addition	23,198 SF
Cafeteria Addition	5,424 SF
Land Cost	N/A
Building Cost	$3,525,000
Equipment and Furnishings Cost	N/A



SECOND FLOOR PLAN



20' 40' 60' 80' 100' 120' 140' 160'

FIRST FLOOR PLAN

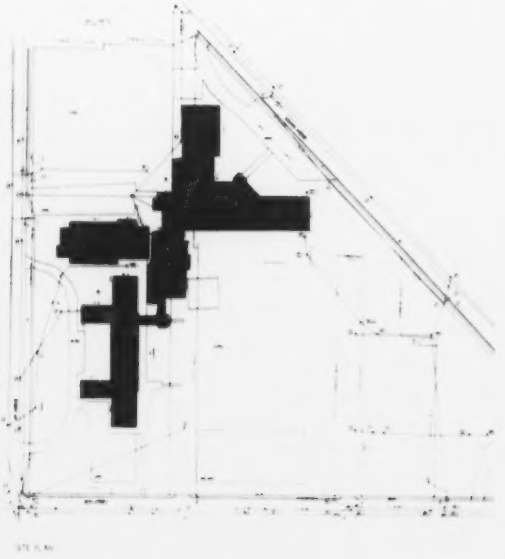
112

113

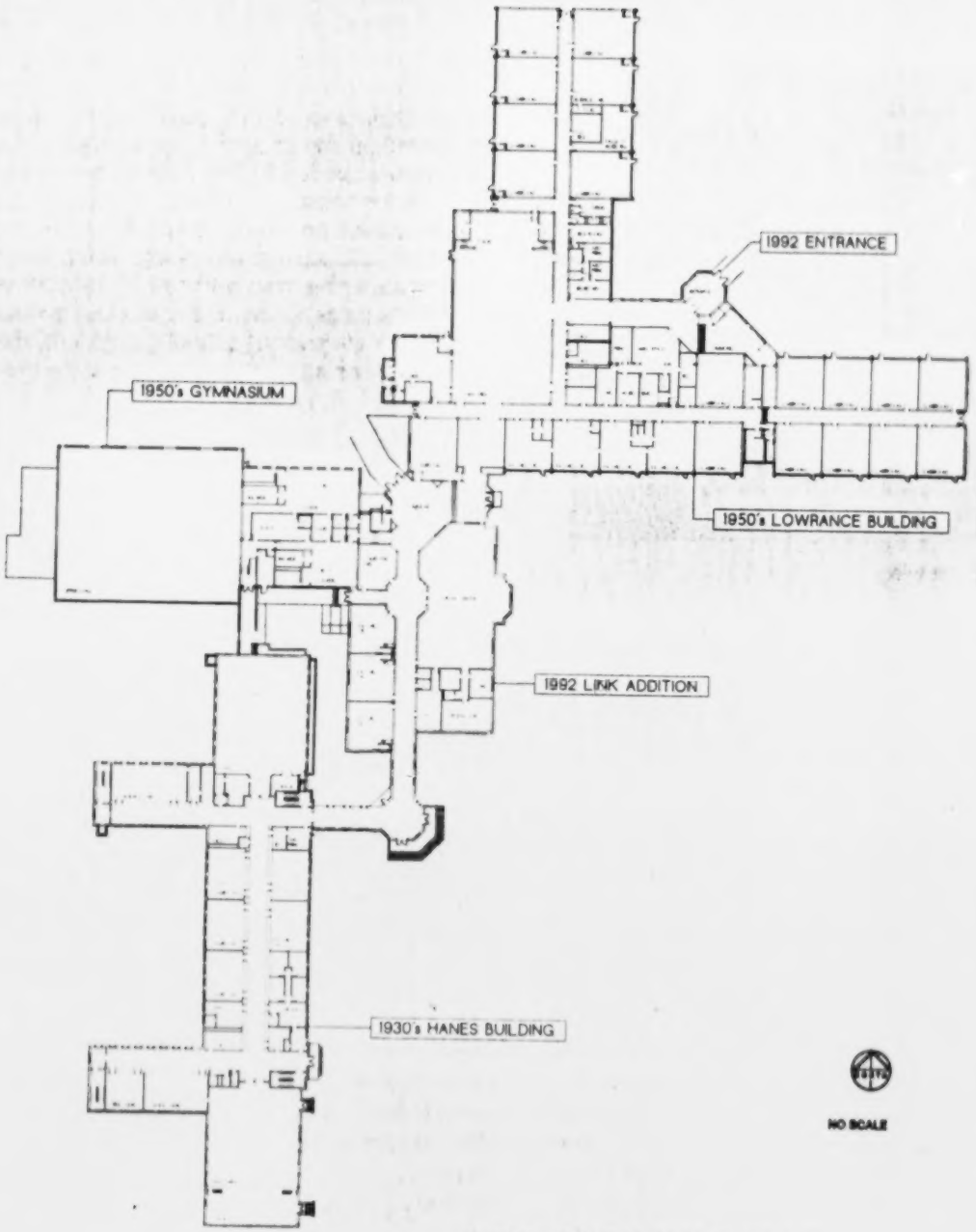
Hanes/Lowrance Middle

photograph by: Newman & Jones P.A.

Hanes and Lowrance were originally a high school and a middle school located on the same campus. Hanes was built in 1930, dedicated as a historic structure in 1989, and Lowrance was built in 1950 and currently houses exceptional children with special needs. Both schools are currently operating as one middle school with a total capacity of 880 students. New construction includes a connector corridor with a new media center and additional classrooms for exceptional children that link all three existing buildings together into one continuous complex. The design of the exterior complements the traditional Hanes Building in massing and detailing.



Administrative Unit	Winston-Salem/Forsyth County
Grade Organization	6-8
Approximate Capacity	880
Opening Date	February 1992
Architect	Newman & Jones P.A.
Landscape Architect	N/A
Structural Engineer	Newman & Jones P.A.
Mechanical Engineer	Consulting Engineering Service
Electrical Engineer	Electrical Engineered Systems
Acreage of Site	20 Acres
Building Square Footage	91,775 SF
Addition	18,375
Renovation	73,400
Land Cost	N/A
Building Cost	$4,140,000
Equipment and Furnishings Cost	N/A



MAIN LEVEL PLAN

BEST COPY AVAILABLE

photograph by: Jill Overton, School Planning

Chase High consists of a 57,506 S.F. addition which includes a new 520 seat auditorium, media center, administration suite, student commons, and 10 new classrooms. This addition projects across the front facade of the existing school and directly connects to two existing classroom wings to create an interior courtyard visible from the new student commons. This addition was designed for after-hours community use and to create a new main entrance. Other additions include a masonry shop, band storage, toilets, and an auxiliary gymnasium. A major interior renovation of the existing school's interior finishes, lights, and heating and air-conditioning systems was part of the project.

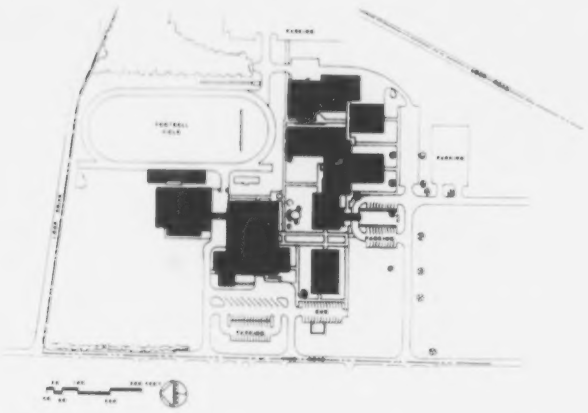
Administrative Unit	Rutherford County
Grade Organization	9-12
Approximate Capacity	800
Opening Date	August 1992
Architect	Holland & Hamrick, Architects, P.A.
Landscape Architect	Fred B. Blackley, ASLA
Structural Engineer	Weld Engineering
Mechanical Engineer	McKnight-Smith Engineers, Inc.
Electrical Engineer	Holladay-Coleman & Associates
Acreage of Site	80 Acres
Building Square Footage	157,506 SF
Existing	100,000 SF
Addition	57,506 SF
Land Cost	N/A
Building Cost	$5,507,415
Equipment and Furnishings Cost	N/A

BEST COPY AVAILABLE

East Henderson High

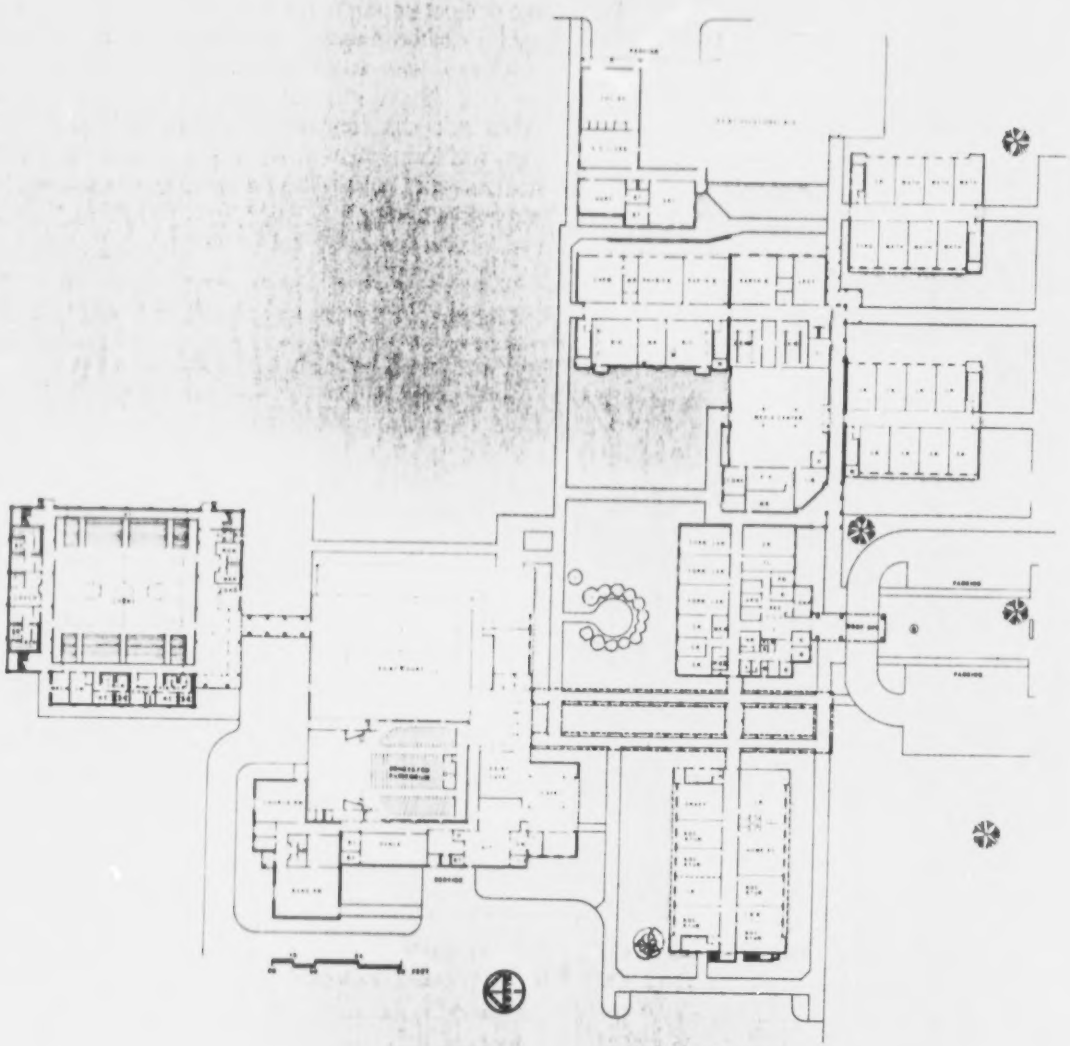
photograph by: Dennis Nodine Photographer

East Henderson High is an existing 1960's high school campus composed of seven independent buildings connected by covered walkways. New additions include a gymnasium, cafeteria, music classrooms, vocational labs, science labs, and a new media center centrally located to the classroom buildings. Also added was a new administrative office located at the major vehicular access of the campus to provide a new "front door" and stronger visitor orientation and identity. All existing buildings were totally renovated on the interior with modern finishes, lighting, air-conditioning, and sound system. The exterior facades of each building were modified with new windows, brick, and standing seam metal roofing to blend with the new construction as one continuous campus.



Administrative Unit	Henderson County
Grade Organization	7-12
Approximate Capacity	1,100
Opening Date	N/A
Architect	Martin Boal Anthony & Johnson Architects
Civil Engineer	Laughter, Austin & Associates
Structural Engineer	Robert T. Williams & Associates
Mechanical/Electrical Engineer	Integrated Engineering Associates

Acreage of Site	50 Acres
Building Square Footage	159,950 SF
Renovation	95,420 SF
Addition	64,530 SF
Land Cost	N/A
Building Cost	$6,110,640
Equipment and Furnishings Cost	N/A

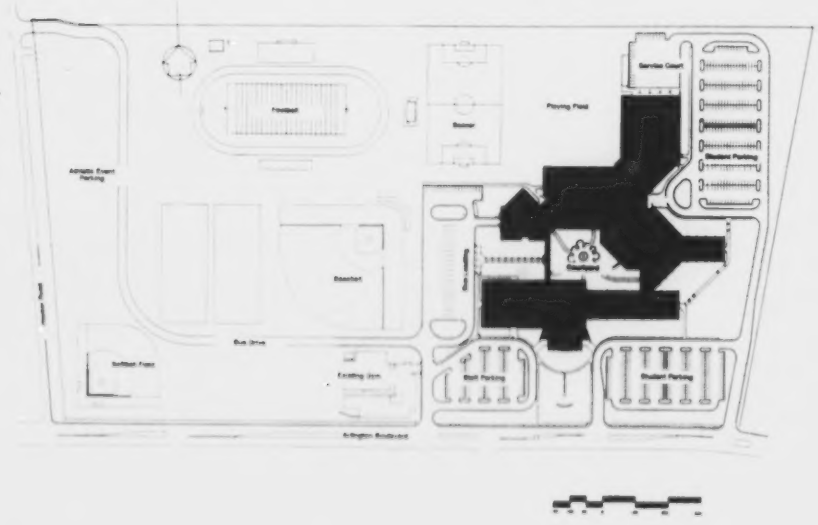


BEST COPY AVAILABLE

Junius H. Rose High

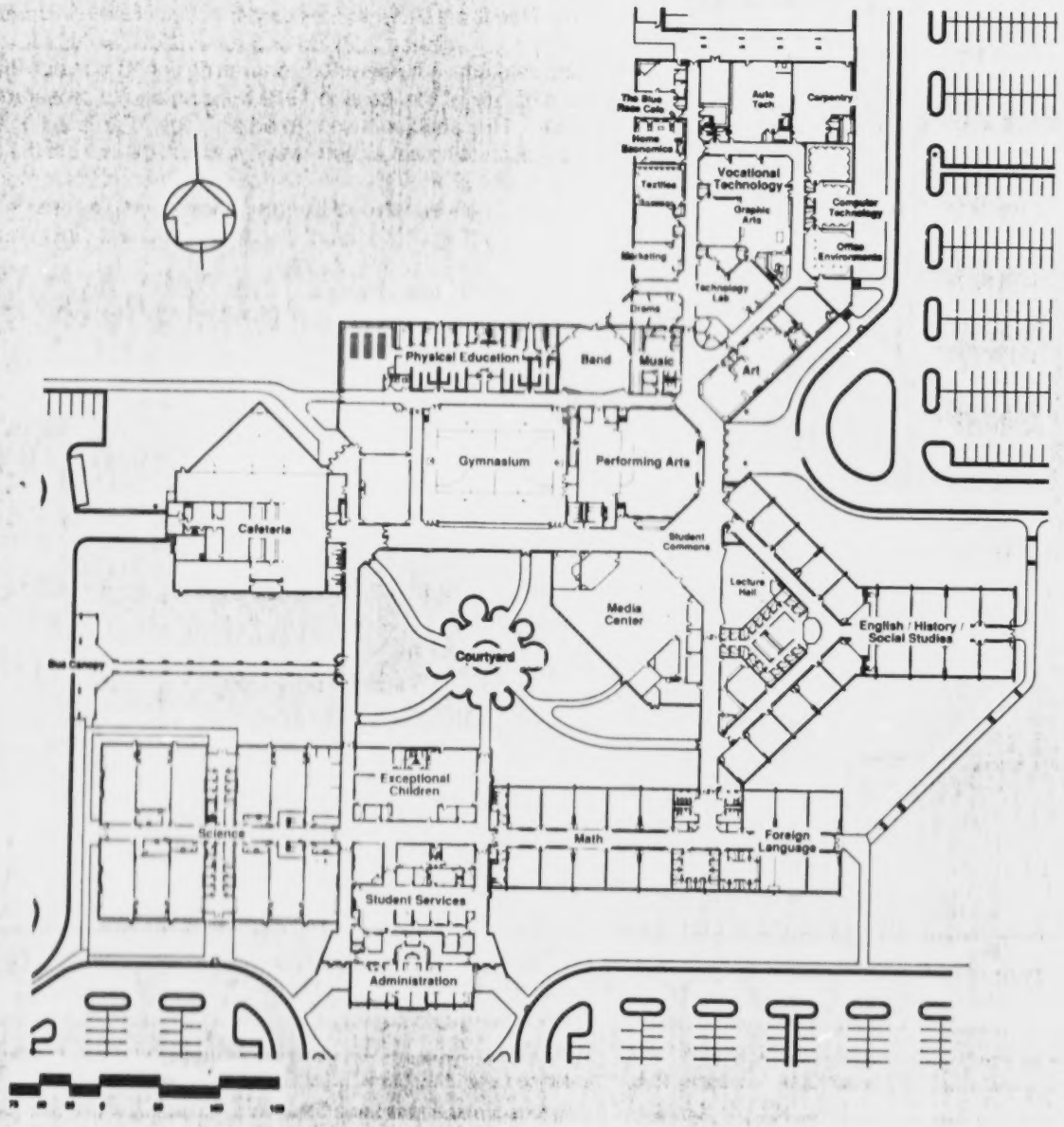
photograph by: Hite / MSM, P. C.

Junius H. Rose High was previously an open plan middle school converted and expanded into a high school. The building is arranged into distinct departments, with centralized office and resource areas in each classroom wing. The major circulation loop creates a central courtyard, with sub-loop corridors feeding off into various building sections. Bus and automobile traffic are separated, and the new east entrance and parking area has been designed to accommodate student cars and to function as the main entrance and parking area for after-hours events held in the Performing Arts Center, the gymnasium, and the media center.



Administrative Unit	Pitt County
Grade Organization	9-12
Approximate Capacity	1,600
Opening Date	Fall 1992
Architect	Hite/MSM, P.C.
Landscape Architect	N/A
Structural Engineer	DCF Engineering, P.A.
Mechanical/Electrical Engineer	Bass, Nixon & Kennedy, Inc.

Acreage of Site	65 Acres
Building Square Footage	250,000 SF
Existing	90,000 SF
Addition	160,000 SF
Land Cost	N/A
Building Cost	$9,500,000
Equipment and Furnishings Cost	N/A

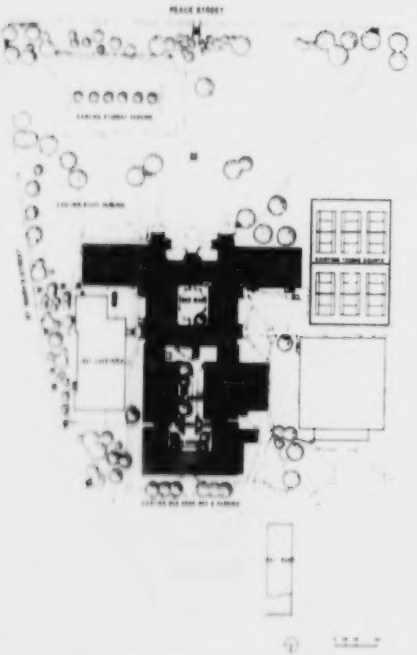


BEST COPY AVAILABLE

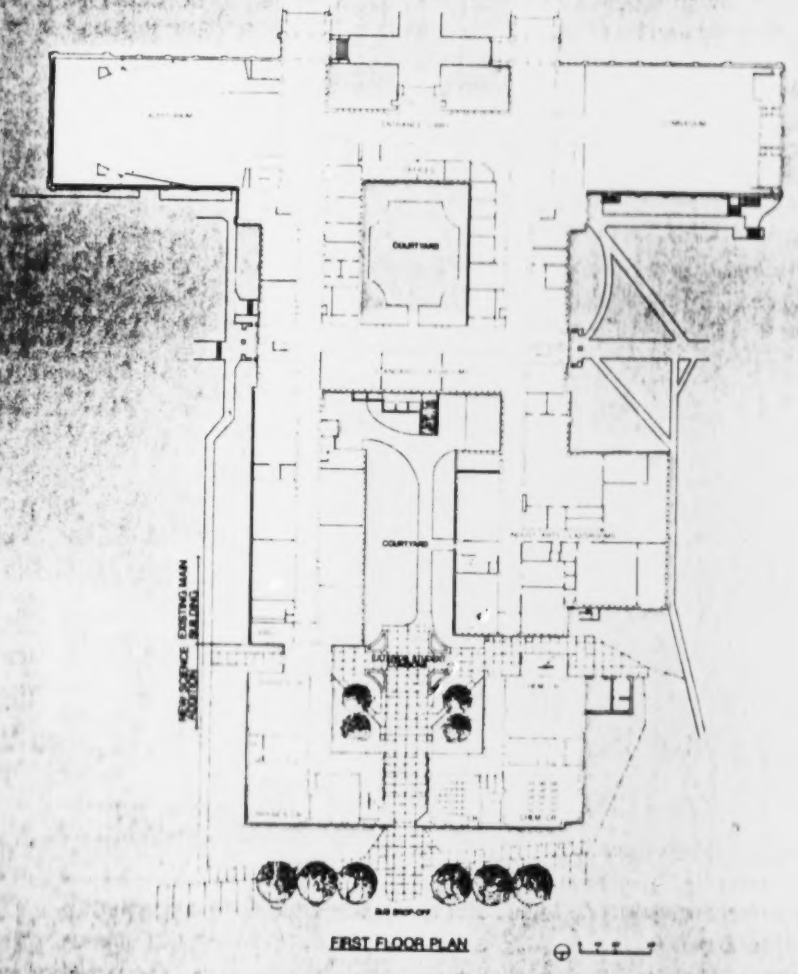
Needham Broughton High

photograph by: Jerry Blow Photographer

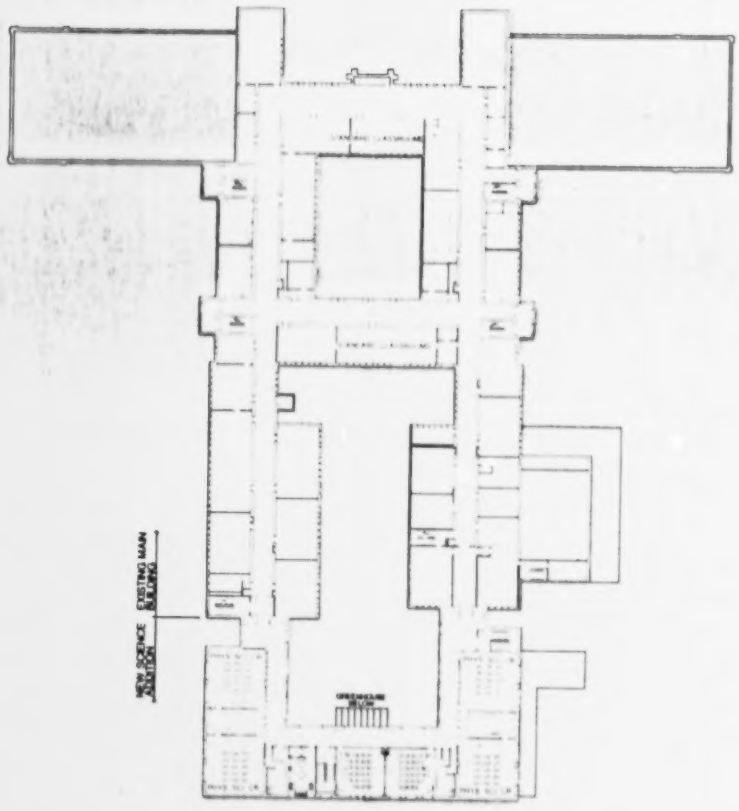
The Needham Broughton High project involved construction of a new three-story science addition and renovations within the main building and cafeteria. The new addition was designed to match the form, color, and details of the existing 1929 building and to preserve its historical style. This addition also formed an edge to an existing interior open space, creating a new entry courtyard and gateway to the campus from the north. Renovation work included air-conditioning of the existing building, conversion of existing science rooms, expansion of the library, and upgrading of the band, choral, and student dining rooms.



Administrative Unit	Wake County
Grade Organization	9-12
Approximate Capacity	2,000
Opening Date	August 1991
Architect	Small Kane Architects, P.A.
Civil Engineer	Bass, Nixon & Kennedy
Structural Engineer	Lasater-Hopkins Engineers
Mechanical/Electrical Engineer	Omni Engineering, Inc.
Acreage of Site	29 Acres
Building Square Footage	106,000 SF
Land Cost	N/A
Building Cost	$3,675,231
Equipment and Furnishings Cost	N/A



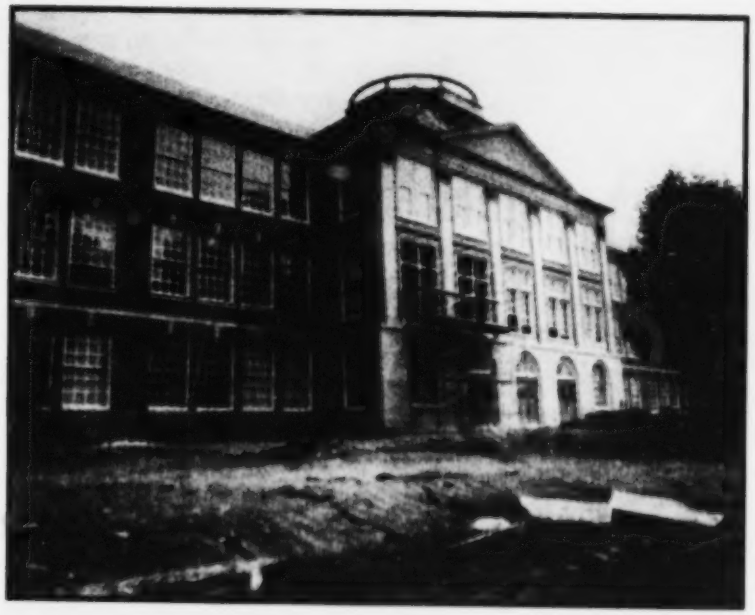
FIRST FLOOR PLAN



THIRD FLOOR PLAN

BEST COPY AVAILABLE

Richard J. Reynolds High

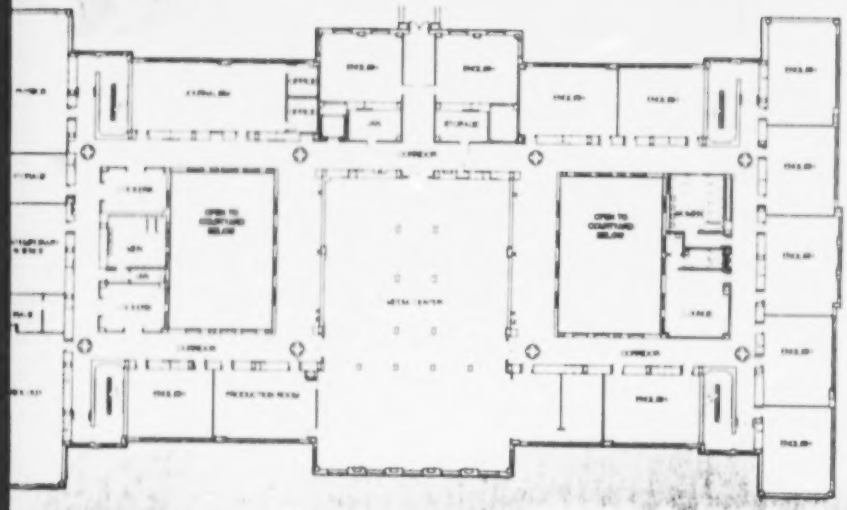


photograph by: Marjorie Acker, School Planning

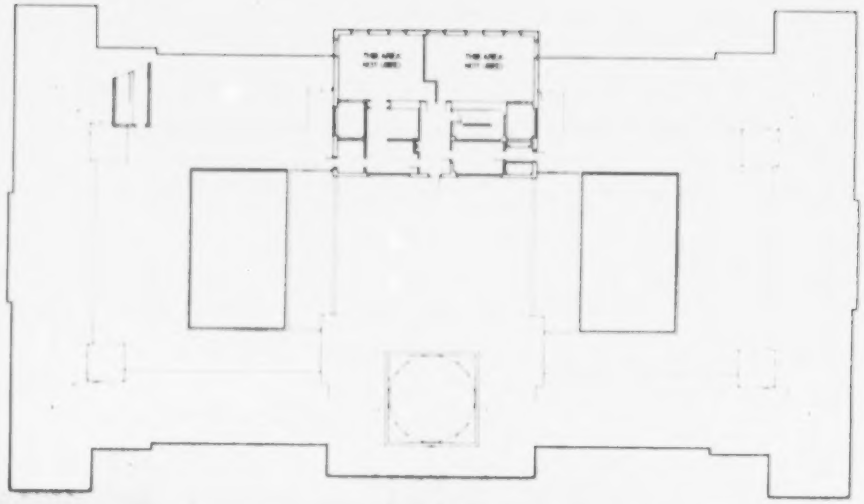
The Richard J. Reynolds High project involved an extensive interior renovation and window replacements to the existing 1923 academic building. This building is listed on the National Register of Historic Places, which requires all modernizing of the facility to be within an existing vocabulary of historical elements. Renovations also included the installation of a new heating and air-conditioning system, expanding the media center, creating a communications infrastructure for audio, visual and computer interaction. The renovated building is a successful marriage between the modern tools of learning and an historic educational facility that will function well for many years to come.

CAMPUS SITE PLAN

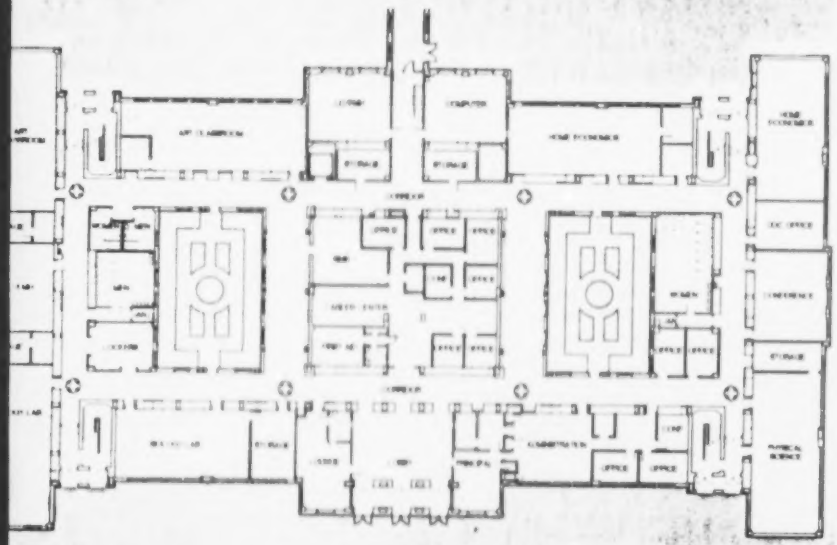
Administrative Unit	Winston-Salem/Forsyth County
Grade Organization	9-12
Approximate Capacity	1075
Opening Date	1993-94
Architect	Hines-Ersoy
Landscape Architect	N/A
Structural Engineer	Nallamala-Wilson
Mechanical Engineer	Consultant Engineering Service
Electrical Engineer	William G. Robinson
Acreage of Site	N/A
Building Square Footage	150,044 SF
Land Cost	N/A
Building Cost	$5,472,004
Equipment and Furnishings Cost	$274,500



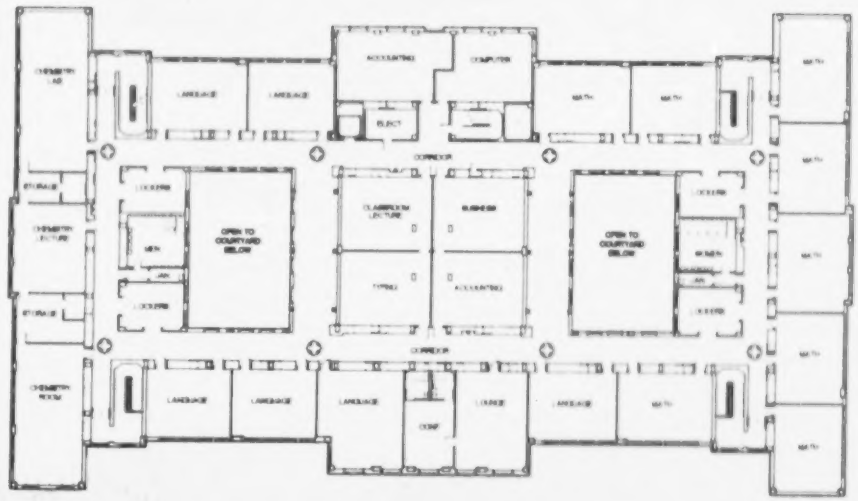
SECOND FLOOR PLAN



FOURTH FLOOR PLAN



FIRST FLOOR PLAN



THIRD FLOOR PLAN

BEST COPY AVAILABLE

A wide range of services are required from a county school board to provide an education to the children of this state. These services include student counseling, career exploration, facility maintenance, bus transportation, development centers for the severely handicapped, atheletics, etc. This section of the publication is included to show a few good examples of the types of facilities required to successfully provide these services.

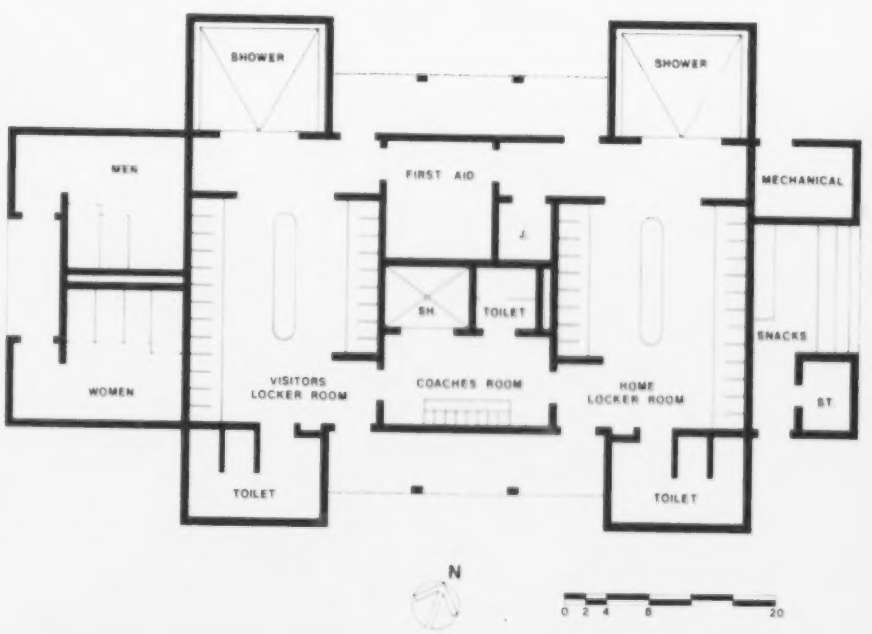
Two of the projects represented in the feature section are related to mechanical systems and bidding procedures. These were included as projects of interest that may be helpful in future mechanical designs for other projects.

The photograph to the right is of a typical classroom in the Lexington City Schools - Developmental Center during a music class. School Planning would like to thank the parents and children for permitting these pictures to be taken and included in this publication.

photograph: courtesy of Lexington City Schools

photograph by: Marcus Lamkin Photography Design

In planning a new high school campus, land is allocated for buildings, parking lots, and athletic fields. Buildings that are associated with athletic fields are pressboxes, concession stands with toilets, and field houses. Chatham Central High has combined two of these facilities into one building. This field house is designed to serve the players and coaches with locker rooms easily accessible from the football field or tennis courts and to serve the public with restrooms and a snack bar. The building is compact in plan with an efficient internal circulation and constructed from natural, low maintenance materials.

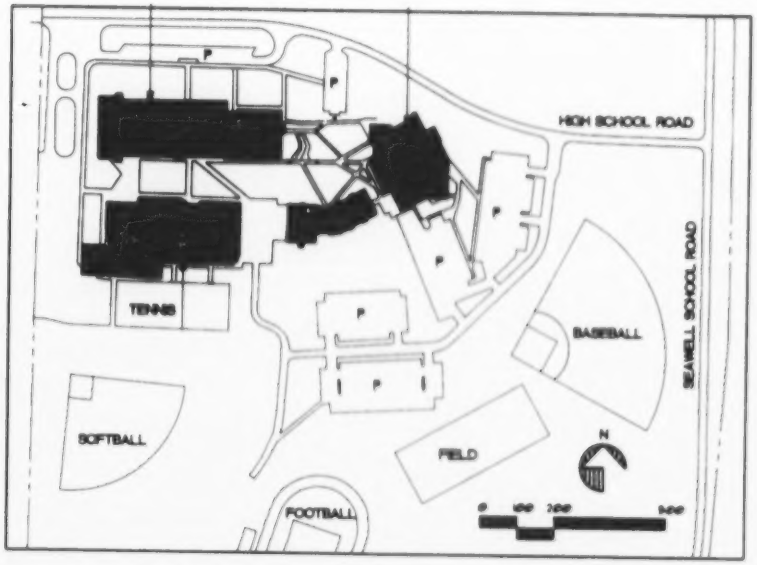


Administrative Unit	Chatham County
Grade Organization	9-12
Approximate Capacity	50
Opening Date	September 1992
Architect	Hayes/Howell, P.A.
Landscape Architect	N/A
Structural Engineer	Gardner, McDaniel & Stewart
Mechanical/Electrical Engineer	Buffaloe, Morgan & Associates
Acreage of Site	N/A
Building Square Footage	2,763 SF
Land Cost	N/A
Building Cost	$185,000
Equipment and Furnishings Cost	N/A

Chapel Hill High - Guidance Office

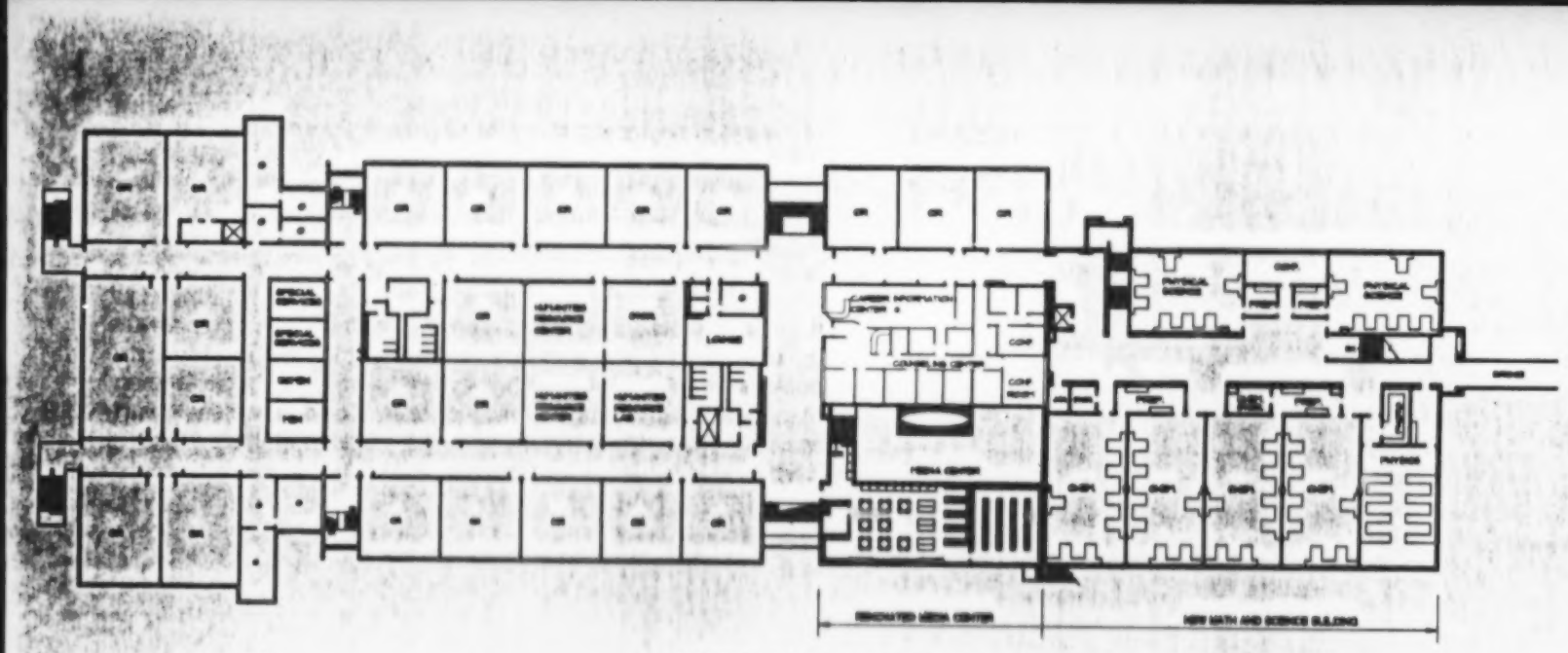
photograph by: Marjorie Acker, School Planning

The existing Chapel Hill High School was extensively renovated and added to when ninth graders were included in the educational program for high schools. A feature element within this project is the new Career Information and Guidance Counseling Center. This area is centrally located on the second floor of the academic building for easy access and high visibility to all students. There is an adequate number of guidance offices and conference rooms to serve a 1,680 student school and a large room dedicated to career information and opportunities. This area is essential in modern high schools.

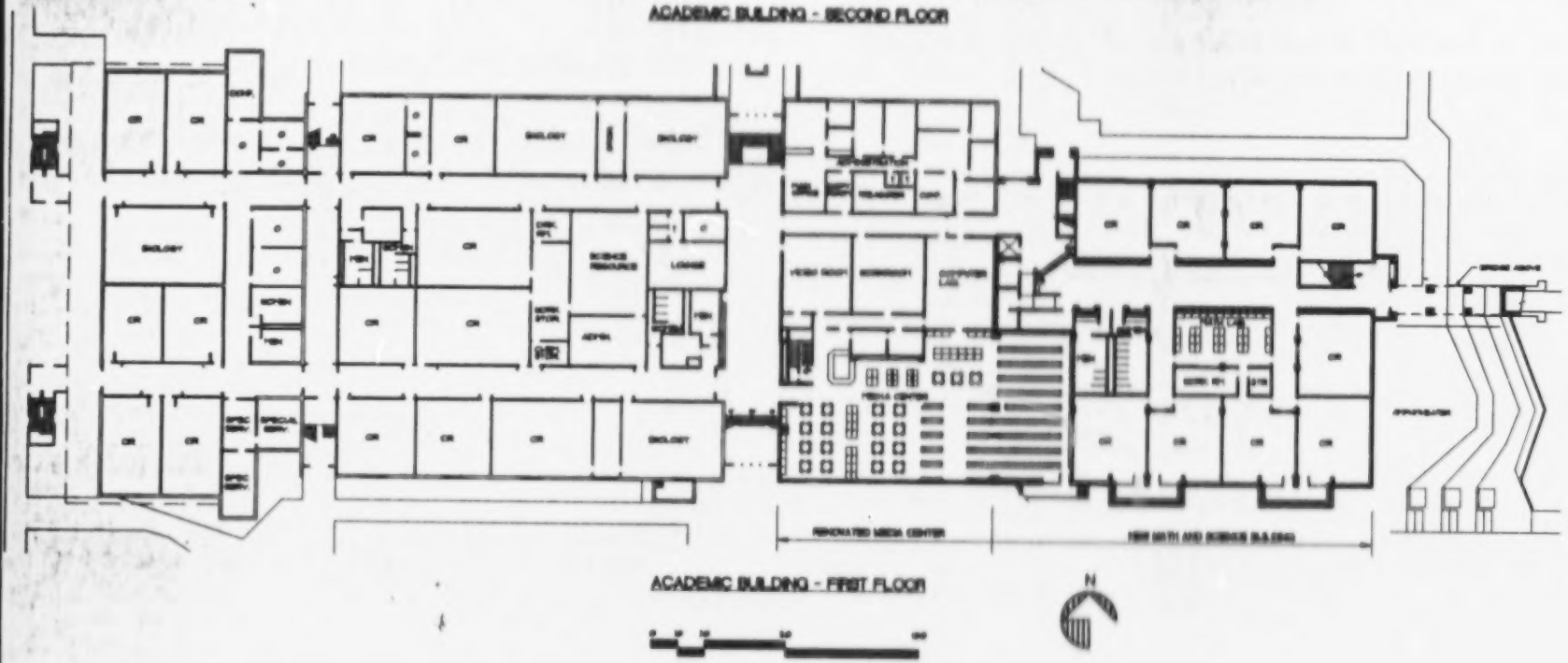


Administrative Unit	Chapel Hill - Carrboro City
Grade Organization	9-12
Approximate Capacity	1,680
Opening Date	August 1991
Architect	Hakan/Corley & Associates, Inc.
Landscape Architect	Hakan/Corley & Associates, Inc.
Structural Engineer	Hakan/Corley & Associates, Inc.
Mechanical/Electrical Engineer	Reece, Noland & McElrath

Acreage of Site	119 Acres
Building Square Footage	73,270 SF
Addition	51,670 SF
Renovation	21,600 SF
Land Cost	N/A
Building Cost	$5,155,333
Equipment and Furnishings Cost	$326,186



ACADEMIC BUILDING - SECOND FLOOR



ACADEMIC BUILDING - FIRST FLOOR

144

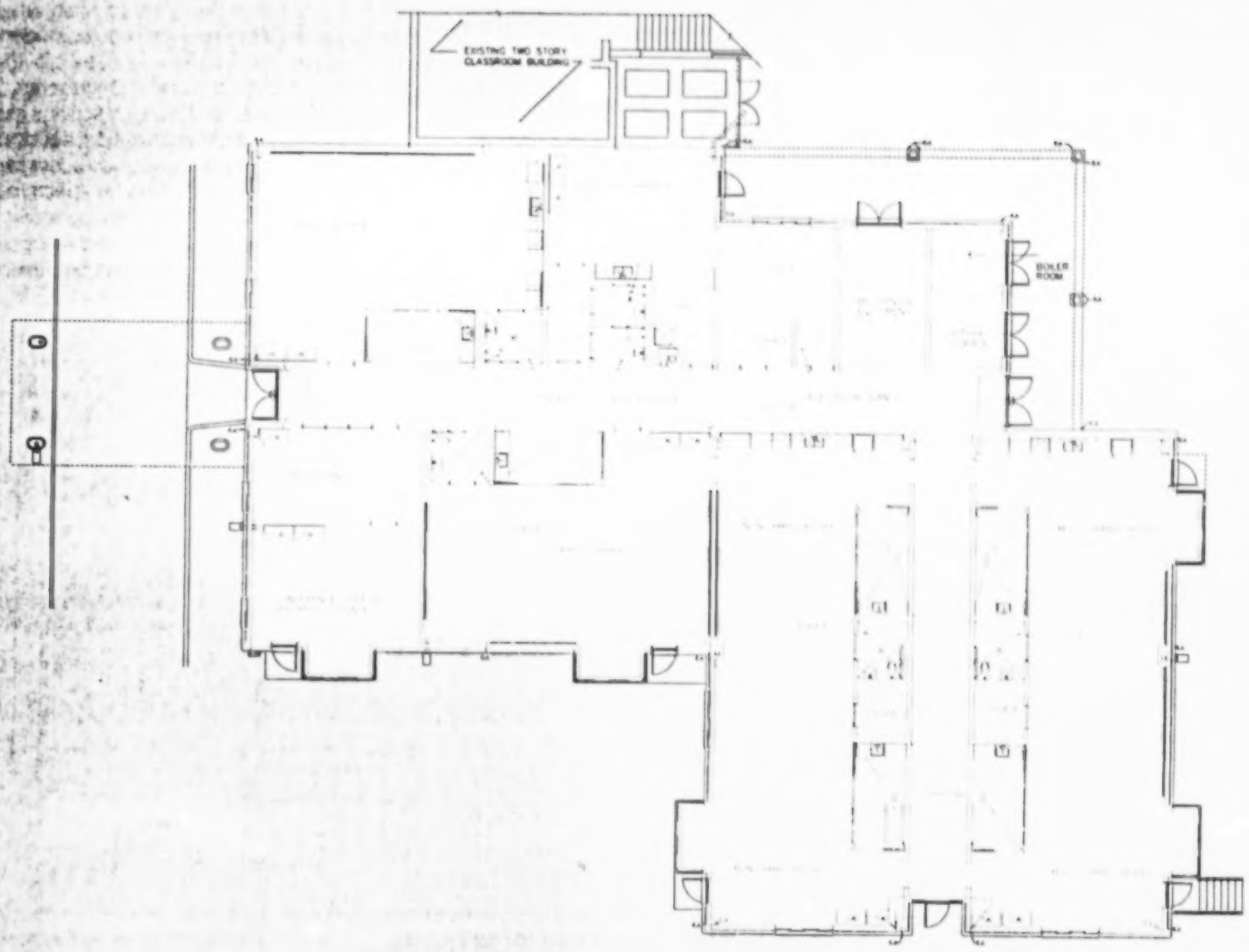
145

Isabelle Wolfe Development Center

photograph by: Gordon H. Schenck, Jr.

The Isabelle Wolfe Development Center was designed to accommodate handicapped students within the school system at a centralized site. The special disabilities of this population are provided for in two long rooms equipped with bathing areas, large toilets, and learning aids for the disabled. Pre-school students have their own room with similar facilities. A separate prevocational room gives students instruction in life-time skills. The physical therapy room provides this important service in a specially equipped room. Unique to this center are the magnetic chalk boards and trays located at the floor level for non-ambulatory students. Special bathing slabs for personal hygiene are soft for students and easy to reach for staff. Cooking centers in each classroom encourage self-sufficiency for students and allow staff to provide meals within the classroom.

Administrative Unit	Monroe City
Grade Organization	Multi-Level
Approximate Capacity	75
Opening Date	Fall 1989
Architect	Boney Architects, Inc.
Landscape Architect	N/A
Structural Engineer	Sam M. Hunter, Jr.
Mechanical Engineer	McKim and Creed
Electrical Engineer	William B. Leland
Acreage of Site	N/A
Building Square Footage	10,600 SF
Land Cost	N/A
Building Cost	$685,904
Equipment and Furnishings Cost	N/A



BEST COPY AVAILABLE

FLOOR PLAN

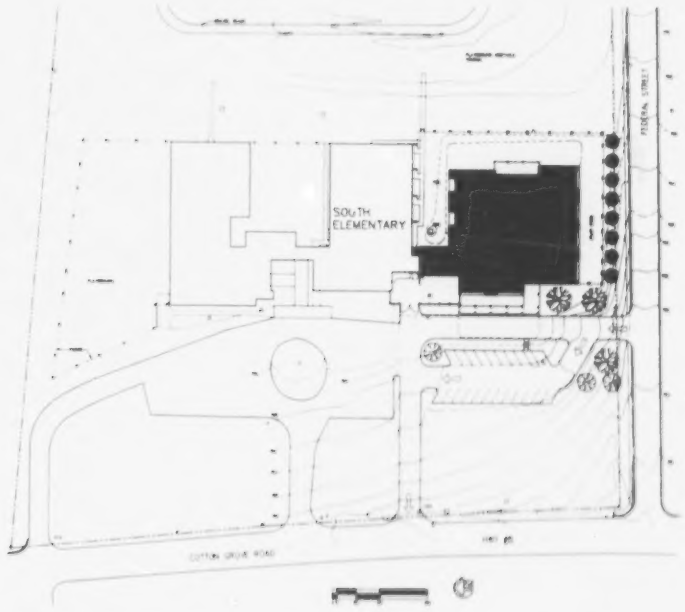
0 5 10 20'

148

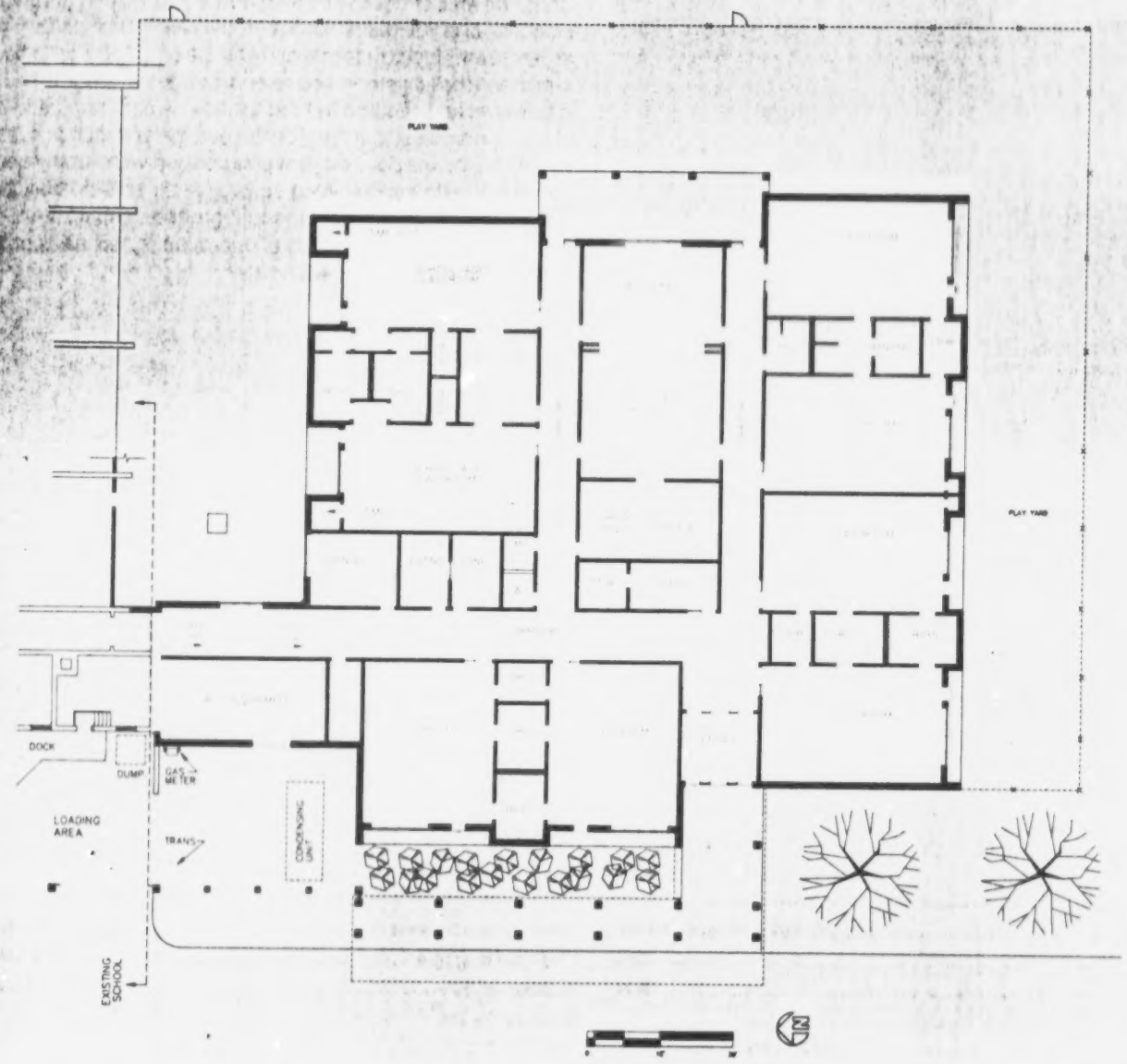
149

photograph by: Jim Barringer

The Lexington Developmental Center was designed to mainstream developmentally disabled and delayed students with regular students from the adjacent elementary school. The entrance canopy provides sheltered unloading for both wheelchair bound and K-3 students. A centrally located Physical and Occupational Therapy activity area serves adjacent classroom suites, facilitates communication, socialization, and physical development skills. Support areas include accessible toilet training facilities, a teaching kitchen, and storage for specialized equipment and appliances. The result is a positive learning environment for the severely and profoundly disabled students, and an opportunity for acceptance and understanding by the K-3 student population.



Administrative Unit	Lexington City
Grade Organization	Pre K - age 21
Approximate Capacity	96
Opening Date	August 1992
Architect	Ramsay Burgin Smith Architects
Landscape Architect	N/A
Structural Engineer	H. Eugene Hunter, P.E.
Mechanical/Electrical Engineer	Joseph M. Gamewell Associates
Acreage of Site	9,968 Acres
Building Square Footage	17,160 SF
Land Cost	N/A
Building Cost	$968,230
Equipment and Furnishings Cost	$35,000

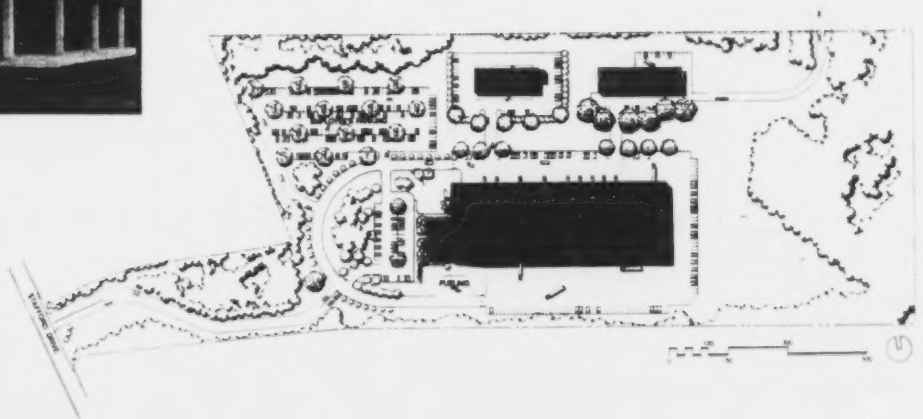


BEST COPY AVAILABLE

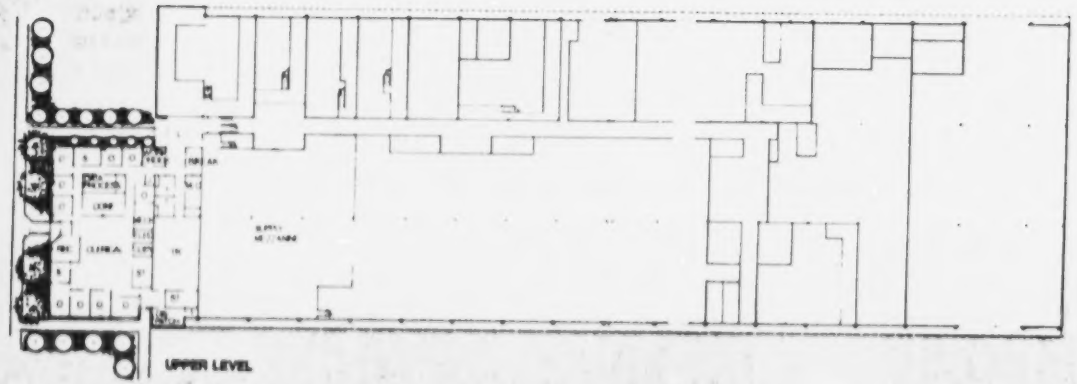
Mecklenburg County - Maintenance Center

photograph by: John Cress Photography

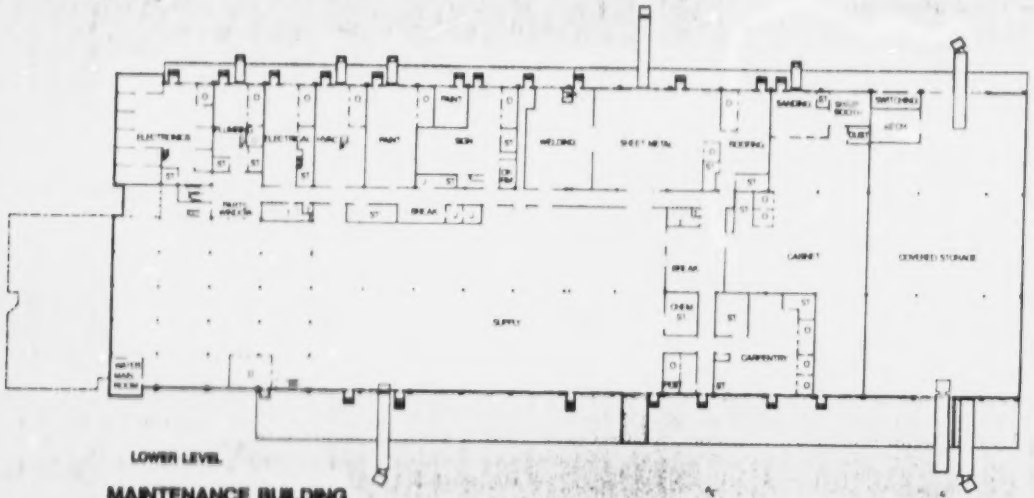
Charlotte Mecklenburg has over 400 buildings and grounds in over 200 locations and 260 maintenance employees. This facility was located on an excellent sloping site that allowed the office portion to be visible to the public and the large warehouse and garage buildings to be hidden on the lower level and secured behind a fence. A common need in most of the shops was vehicular access on the outside and staff access to materials supply on the inside. Shops were grouped with supply and administration in the main maintenance building and separate buildings were built for the light equipment garage and grounds department. The four key design issues were efficiency of operation, safety and control, durability (low maintenance), and economy.



Administrative Unit	Charlotte-Mecklenburg
Grade Organization	N/A
Approximate Capacity	N/A
Opening Date	October 1992
Architect	Brice-Morris Associates
Landscape Architect	Jordan Design Collaborative
Structural Engineer	Structural Engineers
Mechanical Engineer	MWA Engineers
Electrical Engineer	Stephen T. Hocsak & Associates
Acreage of Site	30 Acres
Building Square Footage	153,372 SF
Land Cost	N/A
Building Cost	$5,851,200
Equipment and Furnishings Cost	N/A



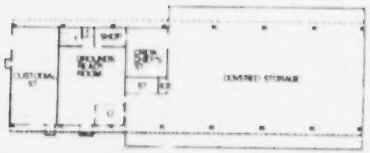
UPPER LEVEL



LOWER LEVEL

MAINTENANCE BUILDING

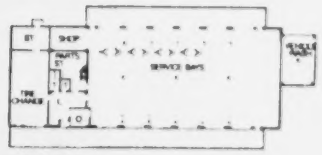
97,711 heated sq.ft.
79,689 unheated sq.ft.
177,399 total sq.ft.



GROUNDS BUILDING

5,113 heated sq.ft.
9,200 unheated sq.ft.
14,313 total sq.ft.

UPPER LEVEL



LOWER LEVEL

GARAGE

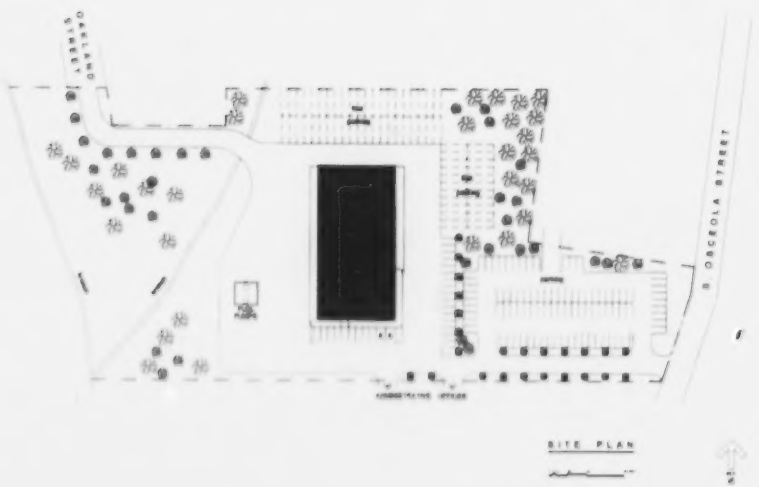
11,160 heated sq.ft.
600 unheated sq.ft.
11,760 total sq.ft.

BEST COPY AVAILABLE

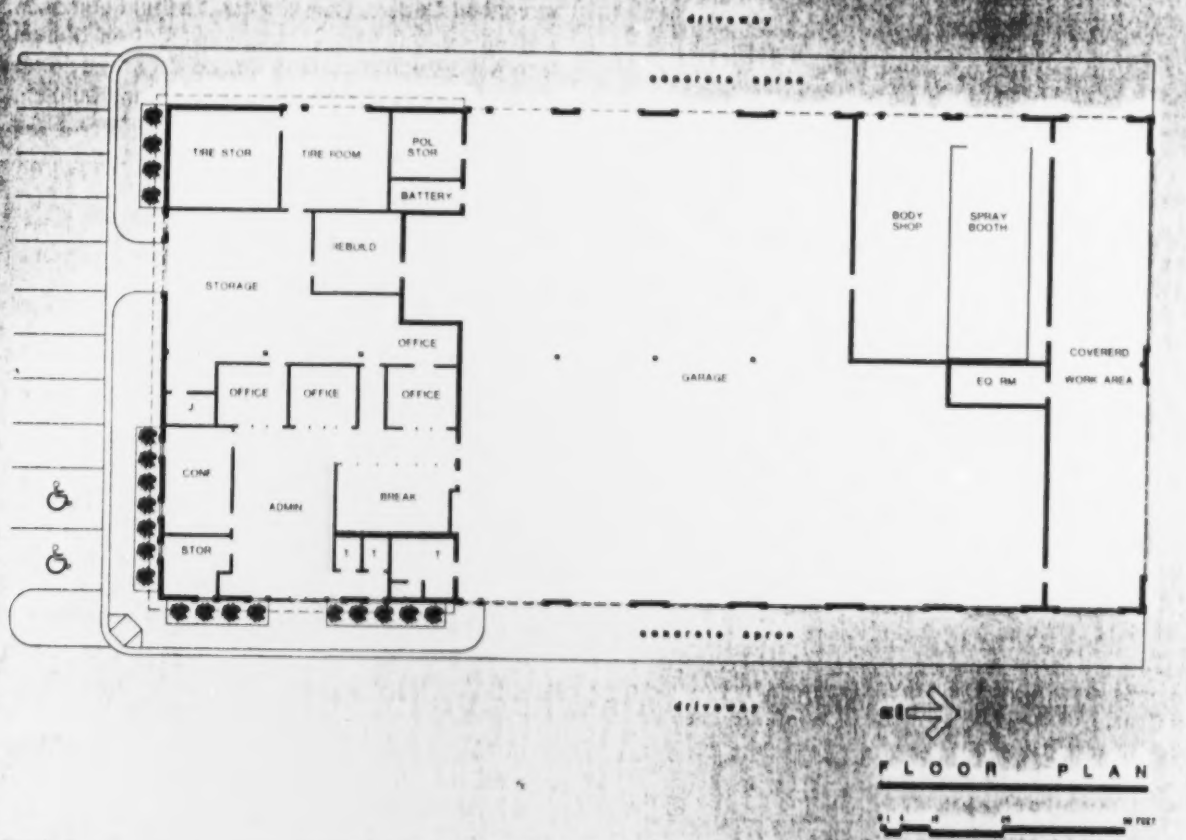
Gaston County - Transportation Facility

photograph by: Stewart-Cooper Architects, P.A.

The Gaston County vehicle maintenance facility was designed to allow full service for not only the regular school bus fleet but other school district vehicles as well. The facility is compact in plan with an administrative area for the staff, material storage areas, ten vehicle service bays inside, two covered work bays outside, a body shop bay, and a self-contained paint bay. The facility also contains a complete fueling system with tanks, monitoring system, card reader product control system, complete oil and lubrication dispensing system with air and compressors. There is plenty of parking designated for staff and for parking school buses during the summer.



Administrative Unit	Gaston County
Grade Organization	N/A
Approximate Capacity	N/A
Opening Date	August 1990
Architect	Stewart-Cooper-Architects, P.A.
Landscape Architect	N/A
Structural Engineer	Structural Engineers, Inc.
Mechanical/Electrical Engineer	Mechanical Engineers, Inc.
Acreage of Site	8.45 Acres
Building Square Footage	21,401 SF
Land Cost	N/A
Building Cost	$922,000
Equipment and Furnishings Cost	$186,150



FLOOR PLAN

BEST COPY AVAILABLE

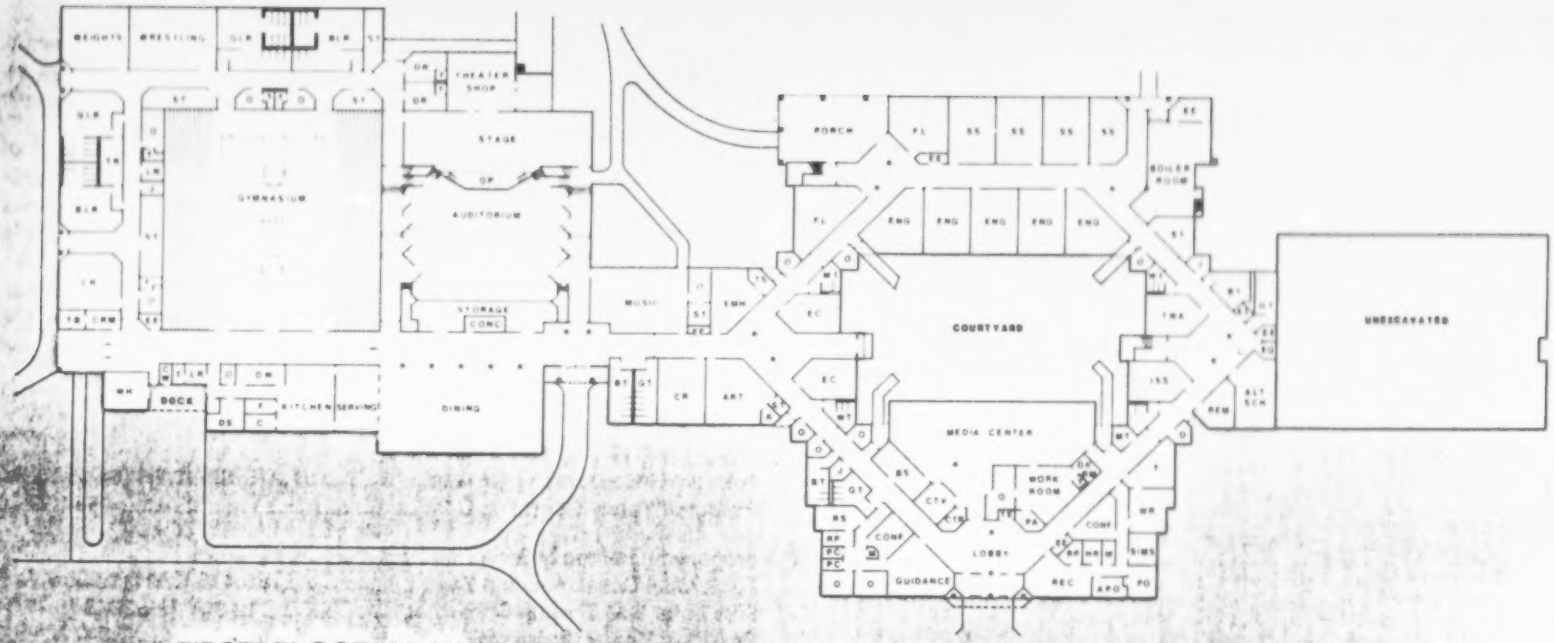
photograph by: J. Weiland Fine Photography

The Polk County High School project included a competitive bid package for two different mechanical systems. Bid documents were prepared to compare the cost differential between using two gas-fired boilers with a central chiller and cooling tower or an all electric air to air heat pump system supplying heating and cooling through similar unit ventilators. The building was also oriented due south for employing passive solar space heating by using large amounts of window glazing. Bid results received in December 1990 were as follows:

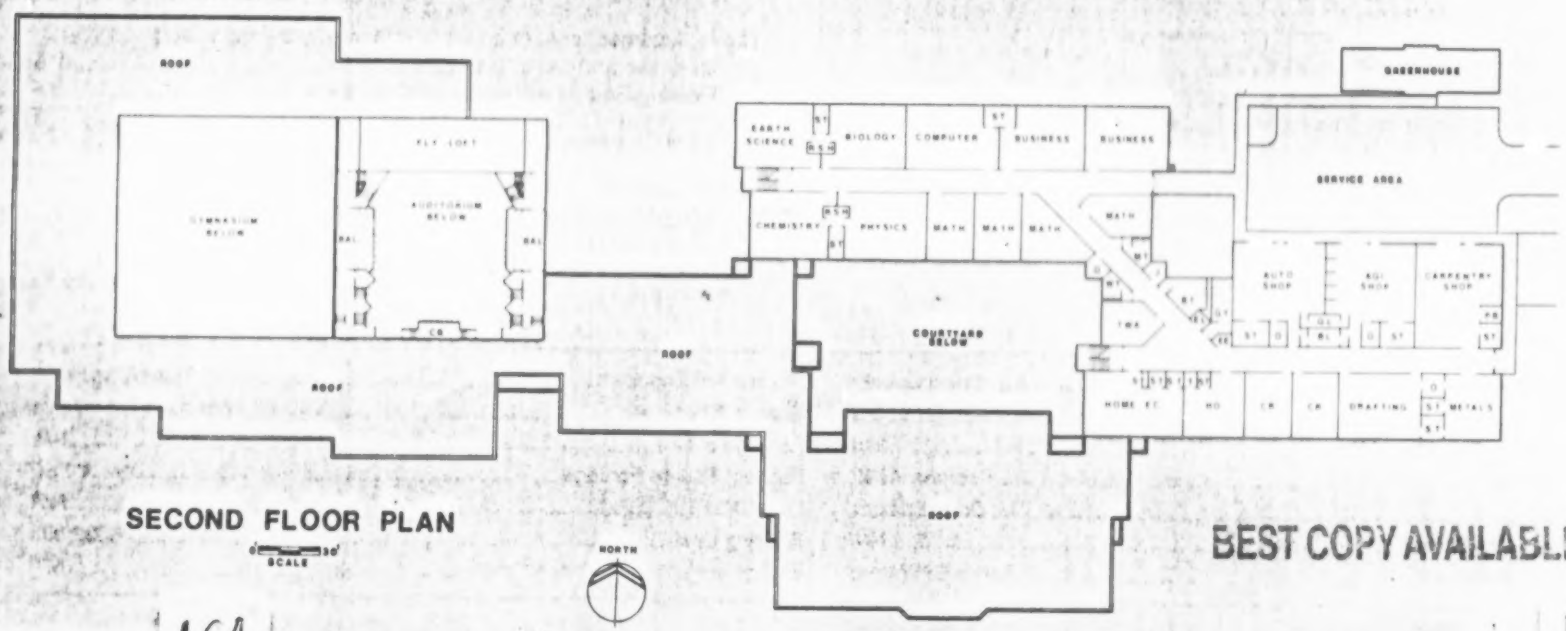
Building cost with boilers/chiller/cooling tower	**$64.13 / S.F.**
Increased General Contract cost for heat pumps	+ $0.19 / S.F.
Decreased Plumbing Contract cost for heat pumps	- $0.02 / S.F.
Increased Mechanical Contract cost for heat pumps	+ $0.83 / S.F.
Increased Electrical Contract cost for heat pumps	+ $1.85 / S.F.
Building cost with air to air heat pumps	**$66.98 / S.F.**
Total Savings	$2.85 / S.F.

SITE PLAN

Administrative Unit	Polk County	Mechanical Engineer	Mechanical Engineers, Inc.
Grade Organization	9-12	Electrical Engineer	K. M. Armstrong Associates
Approximate Capacity	600	Acreage of Site	67.26 Acres
Opening Date	August 1992	Building Square Footage	142,000 SF
Architect	Cort Architectural Group, P.A.	Land Cost	$389,744
Landscape Architect	Jerald A. Snow, ASLA	Building Cost	$10,277,900
Structural Engineer	Sutton-Kennerly Associates	Equipment and Furnishings Cost	$283,000



FIRST FLOOR PLAN

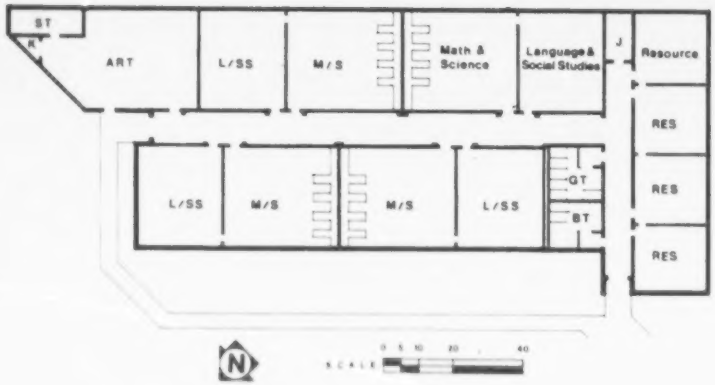


SECOND FLOOR PLAN

SCALE

NORTH

BEST COPY AVAILABLE



The Sun Valley Middle School project was originally planned as a simple classroom addition and cafeteria expansion. These new additions would require a new 100 KW electrical boiler in addition to the existing 420 KW electrical boiler.

A decision was made by the design team to generate a comparative analysis of the yearly operating cost of the electric heating system, versus a proposed gas-fired boiler, capable of handling the existing and new construction. The analysis was performed using the "ECAL" computer program and included a simple payback analysis of the initial investment to replace the boiler. **The results indicated a one year payback!** This analysis was presented to the Union County School Board and a decision was made to incorporate a new gas-fired boiler for the entire school into the project.

ECAL ENERGY ANALYSIS SUMMARY

The existing 420 KW Electrical Boiler:
- Total KWH Consumed in a Year ..... 1,215,138 KWH ($.055/KWH)
- Projected Yearly Operating Cost $66,833.00

The proposed gas-fired boiler for the existing building only:
- Total KWH Consumed in a Year ..... 768,476 KWH ($.055/KWH)
- Plus Total Gas Therms Consumed ..... 12,605 THERMS ($.45/T)
- Projected Yearly Operating Cost $47,938.00

The yearly savings possible by replacing the existing electrical boiler with a new gas-fired boiler is estimated to be:
- $66,833 less $47,938 ..... $18,895 Savings/Year

The replacement cost of an equal capacity gas-fired boiler:
- Materials and Labor (Including O & P) $16,000.00
- Existing Equipment Room Modifications $4,000.00

Total Changeout Investment Costs $20,000.00

Simple payback Analysis of Investment:
- $20,000 (Investment) / $18,895 (Savings/Year) ..... 1.06 Years

Conclusion: Investment will have a one year payback.

Administrative Unit	Union County	Mechanical Engineer	J. F. Tyler Associates
Grade Organization	6-8	Electrical Engineer	K. M. Armstrong Associates
Approximate Capacity	310	Acreage of Site	N/A
Opening Date	February 1992	Building Square Footage	14,100 SF
Architect	M. Dean Baskins	Land Cost	N/A
Landscape Architect	N/A	Building Cost	$832,936
Structural Engineer	James D. Warner	Equipment and Furnishings Cost	N/A

This Schools of Interest, Eighth Edition publication is a representation of school designs reviewed by School Planning over the last five years. These projects were selected by the architects and engineers at School Planning based on three major design categories: new schools, renovations and additions to existing schools, and feature schools.

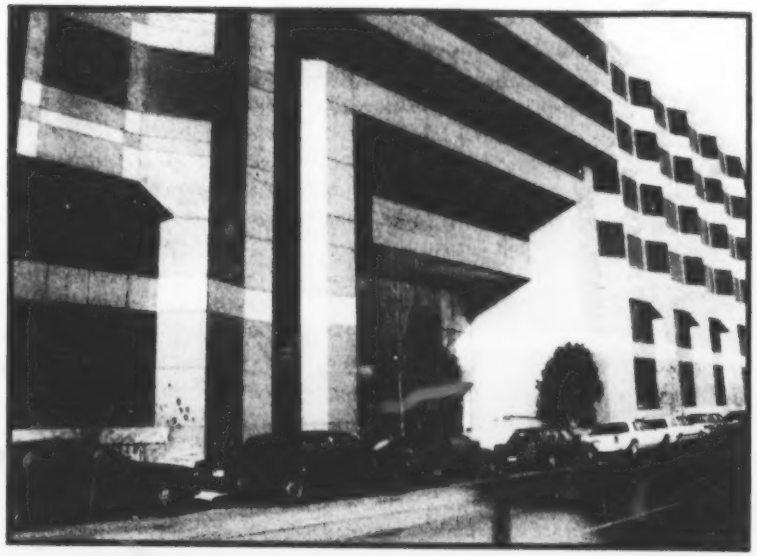
Selection criteria was based on how well the school designs followed our recommendations stated in various School Planning Publications. Most projects were also visited to see how well the school actually functions and how pleased the teachers and students were with the building.

Our main goal at School Planning is to help provide each school system a safe, energy efficient facility with quality construction that will last for decades to come. Each designer selected has successfully met this goal, as well as provided each school with exciting interior features that make the students and teachers feel comfortable and proud of their school.

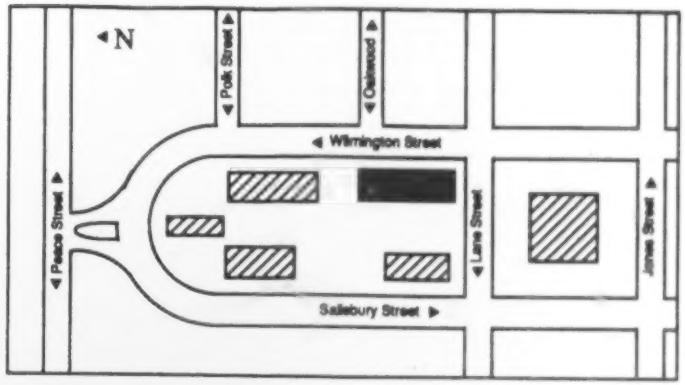
THIS PUBLICATION WAS WRITTEN AND PREPARED BY THESE PEOPLE:

MARJORIE L. ACKER	ARCHITECT
GERALD H. KNOTT	ARCHITECT
JAMES M. LORA	ARCHITECT
STEVEN M. TAYNTON	ARCHITECT
LONG CHANG	ENGINEER
ALLEN P. WINSLOW	ENGINEER
RONALD C. HARRELL	ENGINEER
O. RALPH SELF	ENGINEER
ELEANOR Y. DIXON	SECRETARY
JILL W. OVERTON	GRAPHIC ARTIST

The New Education Building



photograph by: Bruce Clark, DPI



NC EDUCATION BUILDING
SCHOOL PLANNING
301 N WILMINGTON ST
RALEIGH NC 27601-2825

School Planning main phone line:
(919) 715-1990

SEVENTH FLOOR

N